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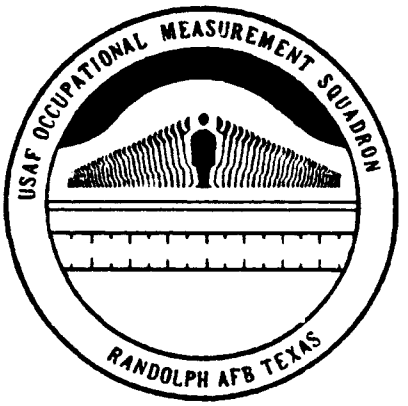

OCCUPATIONAL SURVEY REPORT

AIRCRAFT PNEUDRAULIC SYSTEMS CAREER LADDER

AFSC 454X4/A

AFPT 90-454-907

JUNE 1993

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT SQUADRON
AIR TRAINING COMMAND
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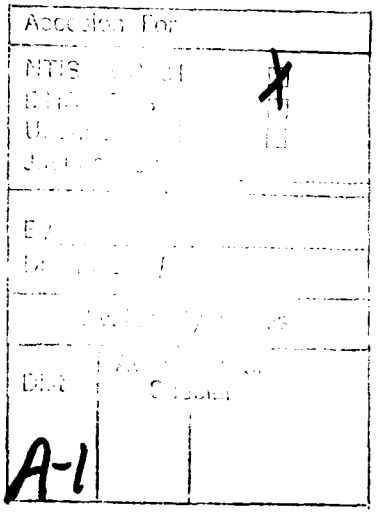

TABLE OF CONTENTS

TABLE OF CONTENTS
(Tables, Figures, Appendices)

TABLE OF CONTENTS (CONTINUED)
(Tables, Figures, Appendices)

PREFACE

This report presents the results of an Air Force Occupational Survey of the Aircraft Pneudraulic Systems career ladder (AFSC 454X4/A). Authority for conducting occupational surveys is contained in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

Mr Tom Duffy, Inventory Development Specialist, developed the survey instrument. Second Lieutenant Trevor D. Staiger, Occupational Analyst, analyzed the data and wrote the final report. MSgt Corey Wharton provided computer programming support, and Ms Tamme Lambert provided administrative support. Major Randall C. Agee, Chief, Airman Analysis Section, Occupational Analysis Flight, USAF Occupational Measurement Squadron, reviewed and approved this report for release.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to the USAF Occupational Measurement Squadron, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph AFB, Texas 78150-4449 (DSN 487-6623).

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SUMMARY OF RESULTS

1. Survey Coverage: The Aircraft Pneudraulic Systems (AFSC 454X4/A) career ladder was surveyed to obtain data needed to update Specialty Training Standards and Plans of Instruction after Rivet Workforce changes to the AFSC. Survey results are based on 2,032 responses from AFSC 454X4/A personnel, which constitute 67 percent of the assigned population.

2. Specialty Jobs: Structure analysis identified five job clusters and eight independent jobs: Pneudraulics Repair Cluster, B-1B Flightline Repair job, C-141 In-Shop Pneudrualics Repair job, Air Refueling Systems Maintenance job, Cross-Utilization Training (CUT) job, Field Training Detachment Job, In-Shop Pneudraulics Repair cluster, Supply Job, Core Automated Maintenance System (CAMS) job, Air Refueling Instructor job, Management cluster, In-Shop Pneudraulics Chief cluster, and Aero Repair cluster. Clusters and independent jobs are discussed within this report.

3. Career Ladder Progression: Personnel in the Aircraft Pneudraulic Systems Maintenance career ladder show a typical pattern of career ladder progression. Three-skill level personnel perform essentially technical tasks. At the 5-skill level, a moderate shift towards supervisory functions occurs, with members still spending more than half of their job time performing technical duties. Seven-skill level personnel spend the majority of their duty time performing managerial and supervisory functions, with a smaller percentage of time dedicated to technical duties. Specialty descriptions in AFR 39-1 provide a broad and accurate overview of tasks and duties performed within the career ladder.

4. Training Analysis: A match of survey data to the AFSC 454X4/A Specialty Training Standard (STS) identified six line items on the STS not supported by survey data. In addition to this, a similar match of data to the Plan of Instruction (POI) for the C3ABR45434-000 course revealed that six POI learning objectives are not supported. Career ladder functional managers and training personnel should carefully review these unsupported STS and POI items to justify their continued inclusion in the training documents.

5. Job Satisfaction Analysis: Overall, AFSC 454X4/A respondents are generally satisfied with their jobs. When compared to other direct support personnel surveyed in 1992, AFSC 454X4/A personnel show relatively higher job satisfaction. When compared to the 1984 (AFSC 423X4) Occupational Survey Report (OSR), survey data indicate an overall increase in job satisfaction among AFSC 454X4/A career ladder respondents. A comparison between major jobs identified in the current sample reveals that members in the Field Training Detachment and Air Refueling Quality Assurance groups have the highest level of job satisfaction, while personnel in the Supply group are the least satisfied.

6. Implications: The AFSC 454X4/A career ladder structure identified in this report is similar to that found in the 1984 OSR. The AFR 39-1 Specialty Descriptions accurately describe the jobs and tasks performed by personnel at all skill levels, and overall satisfaction was positive for the jobs identified. Analysis of the training documents indicates that both the STS and POI contain unsupported areas. Those STS items that were not supported included common aircraft hardware, fluids, lubricants, cleaning agents, sealants, and inspecting. The POI items that were not supported included corrosion control, tasks involving nonportable hydraulic test stands, and teflon hose testing procedures. These areas should be reviewed to justify their continued inclusion in the training documents.

One major change in the career field is that the A-shred, Aero Repair, has been taken out of the Pneudraulics career ladder and merged into the Crew Chiefs (AFSC 457XX) career field. Even though the A-shred is no longer part of this specialty, the data collected from those respondents holding the A-shred were still analyzed and presented within this report. Despite the realignment of the Aero Repair function to the Crew Chiefs, information in this report provides career ladder managers a solid database for decisions about the remaining Pneudraulics career ladder.

OCCUPATIONAL SURVEY REPORT (OSR)
AIRCRAFT PNEUDRAULIC SYSTEMS CAREER LADDER
(AFSC 454X4/A)

INTRODUCTION

This is a report of an occupational survey of the Aircraft Pneudraulic Systems career ladder conducted by the Occupational Analysis Flight, USAF Occupational Measurement Squadron. HQ ATC and the Technical Training Operations Directorate (TTOA) requested this survey to collect data needed to update the Specialty Training Standard and Plans of Instruction after Rivet Workforce changes to the AFSC in April 1985. The last survey pertaining to this career ladder was published in June 1984 (under the prior AFSC 423X4).

Background

As described in the AFR 39-1 Specialty Descriptions for AFSC 45434/54/74, 3- and 5-skill level members perform maintenance on aircraft pneudraulic and inflight refueling systems, install and repair aircraft and inflight refueling components and associated ground equipment pneudraulic components, and inspect, test, install, repair, overhaul, and modify aircraft inflight refueling electrical systems.

In addition, 7-skill level members are also responsible for advising on problems of installing, modifying, and repairing aircraft pneudraulic and inflight refueling systems.

Initial 3-skill level training for AFSC 454X4/A personnel is provided through a 10-week, 1-day course taught at Sheppard AFB TX. The Apprentice Aircraft Pneudraulic Systems Specialists course, C3ABR45434-000, covers security, maintenance management, aircraft familiarizatior, pneudraulic maintenance fundamentals, electrical/electronic fundamentals and circuits, pneudraulic fundamentals, pneumatic systems, hydraulic power systems, landing gear and steering systems, wheel brake systems, hose fabrication, use of standard and special test equipment, and technical orders, inspection and maintenance records, manuals, directives, and other maintenance publications.

The Aero Repair (A-shred) function was merged into the Crew Chiefs (AFSC 457XX) as a result of the January 1993, Aero Repair Restructure Workshop. This restructuring reversed the actions of the Rivet Workforce which occurred in October 1988. The Aero Repair function was not taught in the entry-level course and, therefore, the training document will only be slightly affected.

The resulting JI contained a comprehensive listing of 770 tasks grouped under 15 duty headings. A background section requested information such as grade, job title, time in present job, time in service, job satisfaction, and equipment maintained in performance of the incumbent's job.

Survey Administration

From April through August 1991, Military Personnel Flights at operational bases nationwide administered the inventory to eligible AFSC 454X4A personnel. Members eligible for the survey consisted of the total assigned 3-, 5-, and 7-skill level population, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring during the time inventories were administered to the field; and (4) personnel in their jobs less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Human Resources Directorate, Armstrong Laboratory.

Each individual who completed the inventory first filled in an identification and biographical information section and then checked each task performed in their current job. After checking all tasks performed, each individual rated each task on a 9-point scale showing relative time spent on that task as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount spent).

To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of that member's time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percentage of time spent.

Survey Sample

Personnel were selected to participate in this survey to ensure an accurate representation across MAJCOMs and paygrades. Table 1 reflects the distribution percentages, by MAJCOM, of assigned AFSC 454X4/A personnel, as of April 1991. The 2,032 respondents in the final sample represent 59 percent of all assigned AFSC 454X4/A personnel. Table 2 reflects the distribution percentages by paygrade groups. Although the percentage of assigned is somewhat low, the respondents are distributed proportionately across MAJCOMs and paygrades (see Tables 1 and 2) and are very representative of the assigned population.

Entry into the career ladder currently requires an Armed Forces Vocational Aptitude Battery (ASVAB) General score of 57 and a strength factor of K (70 lbs).

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) AFPT 90-454-907, dated January 1992. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, and tasks from the last AFSC 423X4 OSR. The preliminary task list was refined and validated through personal interviews with 52 subject-matter experts (SMEs) representing 5 MAJCOMs at the following locations:

BASE	UNIT AND REASON FOR VISIT
Chanute AFB IL	ATC Technical Training School
Edwards AFB CA	6510CRS, AFSC Backshop Function
Nellis AFB NV	57CRS, Fighters Weapons Wing, F-15, F-16, A-10, F-111 37CRS, (Tonopah Test Range) F-117A
Travis AFB CA	60EMS, C-5 and C-141 Backshop Maintenance 60AGS, C-5 and C-141 Flightline Maintenance 602MAS, C-5 and C-141 Flightline Maintenance
McConnell AFB KS	384OMS, B-1 and KC-135 Flightline Maintenance 384FMS, B-1 and KC-135 Backshop/Aero Repair
Eglin AFB FL	33CRS, F-15 Backshop
Hurlburt FLD FL	834AGS, 1st SOW Flightline Maintenance FTD527, C-130 and Helicopter Field Training
Eglin AFB FL	3246CRS, AFSC Backshop Maintenance 655SOMS, AFSOC Helicopter Maintenance
Hurlburt FLD FL	834EMS, 1st SOW C-130 and Helicopter Backshop
Kelly AFB TX	2954CLSS, AFLC Aircraft Battle Damage Repair (ABDR) and Depot Maintenance
Little Rock AFB AR	314AGS, C-130 Flightline Maintenance 314EMS, C-130 Backshop Maintenance
Eaker AFB AR	97FMS, B-52 and KC-135 Backshop and Aero Repair Maintenance 97OMS, B-52 and KC-135 Flightline Maintenance

TABLE 1

MAJCOM REPRESENTATION IN SAMPLE

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AMC	43	44
ACC	38	41
PACAF	6	5
AFSOC	5	5
USAFE	5	3
AFMC	2	2
ATC	1	*

TOTAL ASSIGNED = 3,474
TOTAL SURVEYED = 2,935
TOTAL IN SAMPLE = 2,032
PERCENT OF ASSIGNED IN SAMPLE = 59%
PERCENT OF SURVEYED IN SAMPLE = 69%

* Denotes less than 1 percent

TABLE 2

PAYGRADE DISTRIBUTION OF SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-1 to E-3	27	27
E-4	26	25
E-5	26	26
E-6	14	15
E-7	7	7
E-8	*	*

* Denotes less than 1 percent

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 454X4/A personnel (generally E-6 or E-7 technicians) also completed a second booklet for either training emphasis or task difficulty. These booklets were processed separately from the job inventories. This information is used in a number of different analyses discussed in more detail within this report.

Training Emphasis (TE). TE is defined as the amount of structured training first-enlistment personnel need to perform tasks successfully. Structured training is defined as training provided by resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal, or any other organized training method. Thirty-three experienced AFSC 454X4 NCOs and 44 experienced AFSC 454X4A NCOs rated the tasks in the inventory on a 10-point scale ranging from 0 (no training required) to 9 (extremely high amount of training required). The interrater agreement for these raters was acceptable. The average TE rating for AFSC 454X4 was 2.15, with a standard deviation of 1.54. The average TE rating for AFSC 454X4A was 1.57, with a standard deviation of 1.54. Any task with a TE rating of 3.69 or greater for AFSC 454X4 is considered to have a high TE, while tasks with a TE rating of 3.11 or greater for AFSC 454X4A are considered to have a high TE.

When used in conjunction with the primary criterion of percent members performing, TD and TE ratings can provide insight into first-term personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting AFS entry-level jobs.

Task Difficulty (TD). TD is defined as an estimate of the length of time the average airman takes to learn how to perform a task. Thirty-eight experienced AFSC 454X4 NCOs and 45 experienced AFSC 454X4A NCOs rated the difficulty of the inventory tasks on a 9-point scale ranging from 1 (easy to learn) to 9 (very difficult to learn). Interrater agreement was again acceptable. TD ratings are normally adjusted, so tasks of average difficulty have a value of 5.0, with a standard deviation of 1.0. Thus, any task with a TD rating of 6.00 or above is considered difficult to learn.

SPECIALTY JOBS
(Career Ladder Structure)

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. Comprehensive Occupational Data Analysis Program (CODAP) assists by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on the tasks. The CODAP-automated job clustering program then compares all the individual job descriptions, locates

the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, new members are added to this initial group, or new groups are formed based on the similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the Job. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and identified as a Cluster. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, five clusters and eight jobs were identified within the career ladder. Figure 1 illustrates the jobs performed by AFSC 454X4A personnel. A listing of these jobs is provided below. The stage (ST) number shown beside each title references computer-printed information; the letter ("N") stands for the number of personnel in each group.

I. PNEUDRAULICS REPAIR CLUSTER (STG114, N=951)

II. B-1B FLIGHTLINE REPAIR JOB (STG210, N=12)

III. C-141 IN-SHOP PNEUDRAULICS JOB (STG161, N=17)

IV. AIR REFUELING SYSTEMS MAINTENANCE JOB (STG152, N=11)

V. CROSS-UTILIZATION TRAINING (CUT) JOB (STG260, N=23)

VI. FIELD TRAINING DETACHMENT JOB (STG107, N=12)

VII. IN-SHOP PNEUDRAULICS REPAIR CLUSTER (STG120, N=182)

VIII. SUPPLY JOB (STG201, N=15)

IX. CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) JOB (STG186, N=20)

X. AIR REFUELING INSTRUCTOR JOB (STG230, N=12)

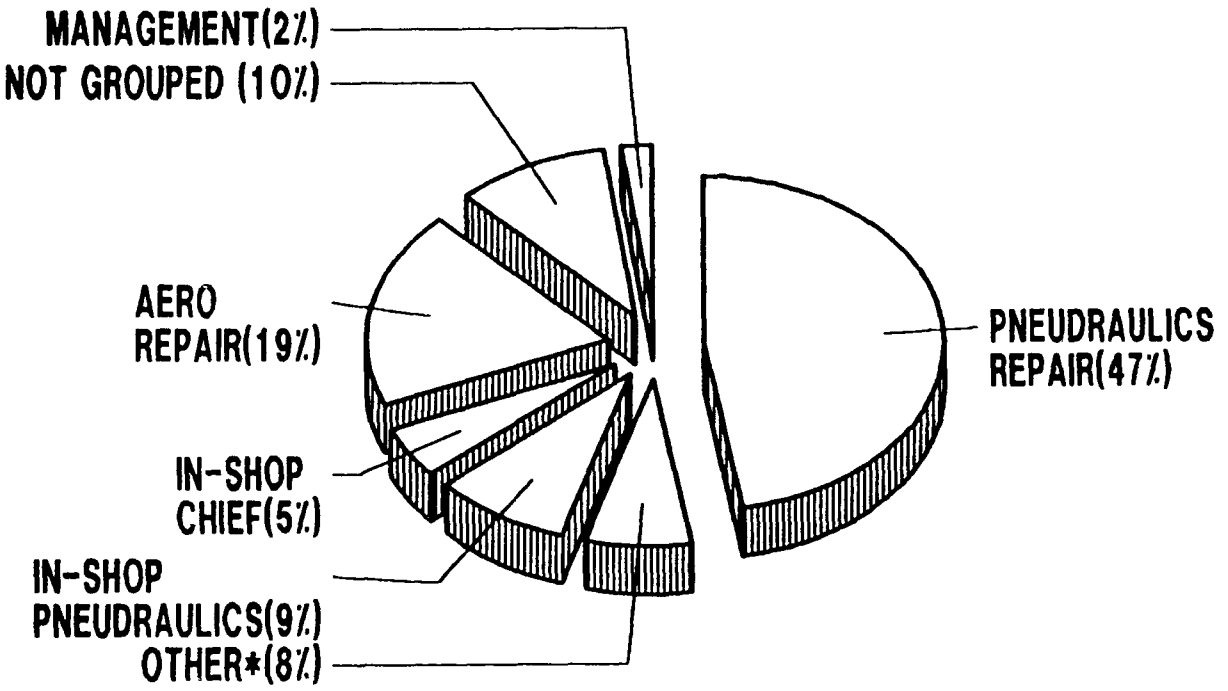
XI. MANAGEMENT CLUSTER (STG072, N=47)

XII. IN-SHOP PNEUDRAULICS CHIEF CLUSTER (STG184, N=95)

XIII. AERO REPAIR CLUSTER (STG105, N=387)

The respondents forming these groups account for 90 percent of the survey sample. The remaining 10 percent were performing tasks or series of tasks which did not group with any of the defined jobs. Some of the job titles

JOBS PERFORMED BY ALL AFSC 454X4/A PERSONNEL



B-1B FLIGHTLINE REPAIR
C-141 IN-SHOP
AIR REFUELING
CUT
FTD TRAINERS
SUPPLY
CAMS
AIR REFUELING QA

FIGURE 1

given by respondents, which were representative of these personnel, include Squadron Safety and Security NCO, Hot Duct Technician, Wheel and Tire Technician, Crash Recovery, Fuel Systems Superintendent, Maintenance Job Controller, ISO Dock Supervisor, and TO Monitor.

Group Descriptions

The following paragraphs contain brief descriptions of the five clusters and eight jobs identified through the career ladder structure analysis. Appendix A lists representative tasks performed by members with each job.

I. PNEUDRAULICS REPAIR CLUSTER (STG114, N=951). This is the core job of the career ladder, performed by almost half of the respondents. Incumbents with the Pneudraulic Repair jobs average 172 tasks, which deal with performing routine maintenance on aircraft pneudraulic and hydraulic systems. They spend 48 percent of their job time on three clearly maintenance-related duties: operationally troubleshooting hydraulic systems, generally maintaining aircraft brake systems and accumulators, and checking hydraulic indicating systems. Representative tasks performed by members with these jobs include:

Bleed hydraulic systems or components
Operationally check hydraulic power systems
Remove or install components of hydraulic power systems
Operationally check wheel brake systems
Remove or install components of aircraft wheel brake systems
Remove or install components of landing gear retraction or extension systems
Inspect hydraulic power systems
Bleed or service wheel brake systems
Remove or install pneudraulic hose assemblies
Remove or install pneudraulic hose assemblies
Service aircraft hydraulic systems

As this is the core job, expect to find personnel from tech school graduates through moderately experienced technicians performing it. Data show the job is performed mostly by personnel in paygrades E-1 through E-4, holding the 5-skill level, and averaging slightly more then 7 years' time in service.

This cluster contains four jobs which are distinguished from each other due to the working areas, the type of aircraft, and the tasks which are performed. Two jobs, the AGS Pneudraulic job and the Flightline Pneudraulic Repair job, are performed on the flightline. The AGS Pneudraulic job is performed primarily on cargo aircraft and involves such tasks as preflight and postflight inspections, refueling and defueling aircraft, and launching and recovering aircraft. The Flightline Pneudraulic Repair job is performed primarily on KC-135 aircraft and involves tasks which are performed on air

refueling systems such as booms and drogues. The third variation, Helicopter AGS job, is also performed on the flightline. Tasks which distinguish this job are those which involve helicopter-specific tasks such as the removal, installation, and checking of collective, cyclic, and directional control systems. The final variation, In-Shop Pneudraulic Repair job, is performed only in the back shop. Tasks performed by members of this job include bench checking and repairing brake systems and accumulators, and fabricating both teflon and rubber hose assemblies.

II. B-1B FLIGHTLINE REPAIR JOB (STG210, N=12). Members with this job maintain B-1B brake and hydraulic systems. Incumbents perform an average of 108 tasks which include changing hydraulic fluid, troubleshooting malfunctions within hydraulic power systems, and repairing overwing fairing systems. In addition, members with the job spend 16 percent of their time working with CAMS. This job is distinguished from that of the Pneudraulics Repair cluster by specific B-1B tasks, which include removing, installing, and troubleshooting structural mode control systems (SMCSs) and wing sweep systems. The following are typical tasks members with the job perform:

Remove or install components of structural mode control systems (SMCSs)
Access CAMS menus and data screens
Operationally check hydraulic power systems
Change CAMS workcenter event narratives
Troubleshoot malfunctions within SMCSs
Dump pressurized hydraulic systems
Open or close CAMS
Defer maintenance discrepancies in CAMS
Remove or install components of overwing fairing systems
Remove or install tube assemblies

Respondents holding this job are junior, averaging 5 years' time in service. Only 8 percent hold the 7-skill level. Seventy-five percent are in paygrades E-1 through E-4, and 66 percent are in their first enlistment.

III. C-141 IN-SHOP PNEUDRAULICS JOB (STG161, N=17). This job constitutes 1 percent of the total sample. The majority of job incumbents are junior personnel who spend most of their job time performing in-shop pneudraulics repair on C-141B aircraft. This includes fabricating rubber and teflon hoses, cleaning test equipment, bench checking brake systems, and working on the utility systems and performing in-shop maintenance of C-141B pneudraulic components. This is a rather broad job as incumbents perform an average of 105 tasks (see Table 4). What distinguishes this job from the Pneudraulics Repair cluster are the tasks dealing with rubber and teflon fabrication equipment and hose assemblies. The following are typical tasks that members with the job perform:

TABLE 3

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	PNEUDRAULICS REPAIR CLUSTER (STG114)	B-1B FLIGHTLINE REPAIR JOB (STG210)	C-141 IN-SHOP PNEUDRAULICS JOB (STG161)	AIR REFUEL SYS MAINT JOB (STG152)	CROSS UTILIZATION TRAINING JOB (STG260)
A ORGANIZING AND PLANNING	2	1	*	3	1
B DIRECTING AND IMPLEMENTING	2	2	1	3	*
C INSPECTING AND EVALUATING	3	3	2	3	3
D TRAINING	1	1	1	1	1
E PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	8	11	14	5	10
F PERFORMING UTILITY SYSTEMS FUNCTIONS	16	20	18	13	17
G PERFORMING PNEUDRAULIC POWER SYSTEMS FUNCTIONS	8	10	6	8	6
H PERFORMING FLIGHT CONTROL SYSTEMS FUNCTIONS	17	14	14	4	16
I PERFORMING LANDING GEAR SYSTEMS FUNCTIONS	15	8	12	6	10
J PERFORMING IN-SHOP MAINTENANCE OF AIRCRAFT PNEUDRAULIC COMPONENTS	3	*	17	*	1
K MAINTAINING SHOP AND AEROSPACE GROUND EQUIPMENT (AGE)	1	1	8	2	1
L PERFORMING CROSS-UTILIZATION TRAINING (CUT) DUTIES	8	4	1	3	30
M PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) FUNCTIONS	6	16	4	7	2
N PERFORMING AERO REPAIR FUNCTIONS	2	3	1	*	2
O PERFORMING AIR REFUELING SYSTEMS FUNCTIONS	8	5	*	42	*

* Denotes less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	FIELD TRAINING DET JOB (STG107)	IN-SHOP PNEUDRAULICS REPAIR CLUSTER (STG120)	SUPPLY JOB (STG201)	CORE AUTOMATED MAINT SYS JOB (STG186)	AIR REFUELING INSTRUCTOR JOB (STG230)
A ORGANIZING AND PLANNING	2	2	7	12	9
B DIRECTING AND IMPLEMENTING	3	2	5	10	6
C INSPECTING AND EVALUATING	3	3	14	11	17
D TRAINING	18	1	2	2	4
E PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	11	22	46	15	3
F PERFORMING UTILITY SYSTEMS FUNCTIONS	8	5	1	1	7
G PERFORMING PNEUDRAULIC POWER SYSTEMS FUNCTIONS	4	1	*	*	6
H PERFORMING FLIGHT CONTROL SYSTEMS FUNCTIONS	28	2	2	*	10
I PERFORMING LANDING GEAR SYSTEMS FUNCTIONS	12	2	*	*	8
J PERFORMING IN-SHOP MAINTENANCE OF AIRCRAFT PNEUDRAULIC COMPONENTS	1	30	1	2	*
K MAINTAINING SHOP AND AEROSPACE GROUND EQUIPMENT (AGE)	1	14	7	*	2
L PERFORMING CROSS-UTILIZATION TRAINING (CUT) DUTIES	1	*	2	1	*
M PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) FUNCTIONS	*	14	12	46	5
N PERFORMING AERO REPAIR FUNCTIONS	4	*	1	*	2
O PERFORMING AIR REFUELING SYSTEMS FUNCTIONS	4	2	*	*	20

* Denotes less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	MANAGEMENT CLUSTER (STG072)	IN-SHOP PNEUDRAULICS CHIEF CLUSTER (STG184)	AERO REPAIR CLUSTER (STG105)
A ORGANIZING AND PLANNING	25	10	3
B DIRECTING AND IMPLEMENTING	20	10	2
C INSPECTING AND EVALUATING	27	14	4
D TRAINING	6	5	1
E PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	12	23	12
F PERFORMING UTILITY SYSTEMS FUNCTIONS	1	2	5
G PERFORMING PNEUDRAULIC POWER SYSTEMS FUNCTIONS	*	1	*
H PERFORMING FLIGHT CONTROL SYSTEMS FUNCTIONS	1	3	31
I PERFORMING LANDING GEAR SYSTEMS FUNCTIONS	1	2	13
J PERFORMING IN-SHOP MAINTENANCE OF AIRCRAFT PNEUDRAULIC COMPONENTS	*	12	*
K MAINTAINING SHOP AND AEROSPACE GROUND EQUIPMENT (AGE)	*	5	2
L PERFORMING CROSS-UTILIZATION TRAINING (CUT) DUTIES	*	*	3
M PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) FUNCTIONS	7	11	9
N PERFORMING AERO REPAIR FUNCTIONS	*	1	15
O PERFORMING AIR REFUELING SYSTEMS FUNCTIONS	*	1	*

* Denotes less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 4

SELECTED BACKGROUND DATA FOR 454X4/A CAREER LADDER JOBS

	PNEUDRAULICS REPAIR CLUSTER	B-1B FLIGHTLINE REPAIR	C-141 IN-SHOP PNEUDRAULICS	AIR REFUEL SYSTEMS MAINTENANCE
NUMBER IN GROUP	951	12	17	11
PERCENT OF SAMPLE	47%	1%	1%	1%
DAFSC DISTRIBUTION				
45434	27%	50%	53%	36%
45434A	0%	0%	6%	0%
45454	49%	42%	41%	45%
45454A	7%	0%	0%	0%
45474	15%	8%	0%	18%
45474A	2%	0%	0%	0%
PAYGRADE DISTRIBUTION				
E-1 to E-3	29%	50%	65%	27%
E-4	29%	25%	29%	36%
E-5	26%	25%	6%	27%
E-6	12%	0%	0%	0%
E-7	4%	0%	0%	9%
E-8	0%	0%	0%	0%
AVERAGE NUMBER OF TASKS PERFORMED	172	108	105	109
AVERAGE MONTHS TAFMS	86	59	33	86
PERCENT IN FIRST ENLISTMENT	41%	66%	83%	54%
PERCENT SUPERVISING	45%	13%	12%	36%

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR 454X4/A CAREER LADDER JOBS

	CUT	FTD	IN-SHOP PNEUDRAULICS REPAIR CLUSTER	SUPPLY	CAMS
NUMBER IN GROUP	23	12	182	15	20
PERCENT OF SAMPLE	1%	1%	9%	1%	1%
DAFSC DISTRIBUTION					
45434	30%	0%	49%	0%	5%
45434A	4%	0%	1%	0%	0%
45454	48%	25%	47%	20%	25%
45454A	17%	25%	0%	47%	15%
45474	0%	33%	3%	13%	55%
45474A	0%	17%	0%	20%	0%
PAYGRADE DISTRIBUTION					
E-1 to E-3	26%	0%	45%	0%	5%
E-4	57%	17%	38%	20%	15%
E-5	13%	42%	15%	47%	40%
E-6	4%	33%	1%	33%	10%
E-7	0%	8%	1%	0%	30%
E-8	0%	0%	0%	0%	0%
AVERAGE NUMBER OF TASKS PERFORMED	85	93	78	66	66
AVERAGE MONTHS TAFMS	66	137	53	140	146
PERCENT IN FIRST ENLISTMENT	35%	0%	62%	7%	5%
PERCENT SUPERVISING	22%	8%	28%	20%	60%

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR 454X4/A CAREER LADDER JOBS

	AIR REFUELING INSTRUCTOR	MANAGEMENT CLUSTER	IN-SHOP PNEUDRAULICS CHIEF CLUSTER	AERO REPAIR CLUSTER
NUMBER IN GROUP	12	47	95	387
PERCENT OF SAMPLE	1%	2%	5%	19%
DAFSC DISTRIBUTION				
45434	0%	0%	0%	3%
45434A	0%	0%	0%	10%
45454	25%	9%	35%	2%
45454A	0%	2%	3%	64%
45474	75%	66%	47%	1%
45474A	0%	23%	15%	21%
PAYGRADE DISTRIBUTION				
E-1 to E-3	0%	0%	0%	11%
E-4	0%	2%	12%	0%
E-5	25%	0%	23%	20%
E-6	58%	19%	39%	80%
E-7	17%	74%	25%	0%
E-8	0%	4%	1%	0%
AVERAGE NUMBER OF TASKS PERFORMED	79	70	161	111
AVERAGE MONTHS TAFMS	163	196	160	155
PERCENT IN FIRST ENLISTMENT	0%	0%	1%	16%
PERCENT SUPERVISING	67%	83%	99%	55%

Service aircraft hydraulic systems
Bleed hydraulic systems or components
Remove or install components of hydraulic power systems
Drain nonpressurized hydraulic systems
Remove or install pneudraulic hose assemblies
Remove or install components of cargo door or ramp systems
Remove or install components of auxiliary hydraulic systems
Inspect elevator hydraulic systems
Inspect hydraulic power systems
Inspect hydraulic cargo door systems

Respondents holding this job are junior personnel, averaging slightly less then 3 years time in service. Ninety-four percent are in paygrades E-1 through E-4. Fifty-nine percent of these respondents hold the 3-skill level, while 41 percent hold the 5-skill level.

IV. AIR REFUELING SYSTEMS MAINTENANCE JOB (STG152, N=11). Members in this job represent 1 percent of the survey sample and are responsible for maintaining air refueling systems on KC-135 aircraft. They spend 42 percent of their duty time inspecting and operationally checking air refueling boom systems, checking and troubleshooting malfunctions within refueling drogue systems, and adjusting air refueling indicating system components. This is a somewhat broad job as members perform an average of 109 tasks. Representative tasks for this job include:

Inspect air refueling boom signal systems
Operationally check air refueling boom systems
Inspect air refueling boom hydraulic systems
Inspect air refueling boom assemblies
Inspect air refueling boom control systems
Operationally check air refueling signal systems
Troubleshoot malfunctions within air refueling systems
Remove or install components of air refueling boom systems
Adjust air refueling boom system components
Inspect air refueling boom indicating systems

Respondents holding this job are moderately experienced, averaging slightly more then 7 years' time in service. While 54 percent are in their first enlistment, the predominant paygrades are E-4 and E-5. The majority (45 percent) hold the 5-skill level, and 36 percent hold the 3-skill level.

V. CROSS-UTILIZATION TRAINING (CUT) JOB (STG260, N=23). This job constitutes 1 percent of the total sample. Incumbents perform an average of 85 tasks, which indicate this job is more limited in focus than those previously addressed. Respondents do few pneudraulics tasks, as they are pri-

marily involved with CUT duties such as walking wings, launching and recovering aircraft, positioning and removing aircraft chocks or ground safety pins, and positioning powered and nonpowered AGE to aircraft. The following are typical tasks the members of this job perform:

Walk wings or tails during aircraft towing operations
Perform single-point aircraft refueling or defueling
Position nonpowered or powered AGE to aircraft
Check or service engine oil
Service aircraft hydraulic systems
Operationally check spoiler systems
Launch or recover aircraft
Ground aircraft
Tow aircraft

CUT personnel average 66 months' TAFMS, 65 percent hold the 5-skill level, 34 percent hold the 3-skill level, and 83 percent are in paygrades E-1 through E-4.

VI. FIELD TRAINING DETACHMENT JOB (STG107, N=12). This job is performed by 1 percent of the sample who spend 28 percent of their duty time performing flight control systems functions and 18 percent on training. Incumbents of this limited job perform an average of 93 tasks (see Table 4). Their responsibilities include maintaining aircraft flight control systems and conducting field training detachment (FTD) training. Time spent on duties by members of this job reflects these two areas of concentration. Twenty-eight percent of their job time is devoted to troubleshooting procedures, landing gear maintenance, and operationally checking flight control systems. Eighteen percent of their duty time is spent preparing lesson plans, scoring tests, and evaluating training aids or materials. This is the only group of respondents in the survey who reported tasks related to FTD. Members with this job are distinguished by the time they spend on the following tasks:

Prepare lesson plans
Score tests
Evaluate training materials or aids
Prepare changes to course summary documents or course objective documents
Evaluate student questionnaires or critiques
Conduct field training detachment (FTD) training
Inspect training aids for operation or suitability
Administer tests

This job is performed by more experienced personnel than the maintenance jobs; most are in paygrades E-5 and E-6, 50 percent hold the 7-skill level, and 50 percent hold the 5-skill level. Respondents average over 11 years' TAFMS, and 42 percent of the respondents have the A-shred (Aero Repair).

VII. IN-SHOP PNEUDRAULICS REPAIR CLUSTER (STG120, N=182). This job is performed by 9 percent of the survey sample. Incumbents perform an average of 78 tasks in this rather narrow job. They report spending 30 percent of their duty time on in-shop maintenance of aircraft pneudraulics systems and 22 percent of their time on administrative and supply functions. Members in this job work with hose fabrication and test equipment, bench check or repair accumulators and brake assemblies, and access CAMS menus and data screens. This job differs from that of the other In-Shop Pneudraulic maintenance jobs in that the tasks performed are much more concentrated on CAMS and hydraulic test equipment. Typical tasks performed by members with the job include:

Open or close CAMS
Access CAMS menus and data screens
Bench check components of rotor brake systems
Perform operator maintenance on hydraulic test stands
Perform operational checks of hydraulic test equipment
Troubleshoot malfunctions within shop hydraulic test stands
Remove or replace components of shop hydraulic test stands or equipment
Clean or lubricate hydraulic components of test stands
Prepare pneudraulic components for storage or shipment
Clear or close out completed aircraft maintenance discrepancies in CAMS

These personnel are fairly new to the job, averaging little more than 4 years' time in service. The majority (62 percent) are in their first enlistment, and 83 percent are in paygrades E-1 through E-4. Only 3 percent hold a 7-skill level, while 50 percent hold the 3-skill level. This is a pure pneudraulics repair job, with only 1 percent having the A-shred (Aero Repair).

There were two variations within this cluster, distinguished primarily by tasks which are a result of rank and experience. In one variation, more senior members perform administrative tasks, such as completing necessary paperwork and coordinating with base supply to obtain needed parts. In the other variation, first-enlistment airman perform basic tasks such as fabricating teflon and rubber hoses, bench checking and repairing brakes and accumulators, and cleaning shop equipment.

VIII. SUPPLY JOB (STG201, N=15). Airmen in this job represent 1 percent of the total sample. They spend 46 percent of their job time in administrative and supply functions, which is a greater proportion than members of any other job in the career ladder. Incumbents perform an average of 66 tasks in this somewhat narrow job. These airmen are responsible for controlling and issuing all equipment used by maintenance personnel. In addition, they inventory consolidated tool kits, evaluate the serviceability of equipment and supplies, and complete required maintenance forms. Members with this job are distinguished by the time they spend performing the following tasks:

Inventory consolidated tool kits (CTKs)
Inventory equipment, tools, or supplies
Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)
Annotate DD Forms 1348-1 (DOD Single Line Item Release/Receipt Document)
Issue supplies and equipment
Maintain CTKs
Complete AF Forms 1297 (Temporary Issue Receipt)

Respondents performing this job are relatively experienced, averaging almost 12 years' time in service. Only 7 percent are in their first enlistment, and the predominant paygrades are E-5 and E-6. The majority (67 percent) hold the 5-skill level. Within this job, 47 percent of incumbents hold duty AFSC 45454A, and another 20 percent hold duty AFSC 45474A.

IX. CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) JOB (STG186, N=20). This job is performed by 1 percent of all survey respondents. The focus of this job is on performing core automated maintenance systems (CAMS) functions. Respondents reported performing an average of 66 tasks and spending 46 percent of their duty time on such activities as opening or closing CAMS, changing errors within CAMS, and accessing the CAMS menus and data screens. In addition to working with CAMS, personnel report they are responsible for coordinating maintenance problems with other agencies and determining work priorities within the shop. Examples of CAMS tasks performed by members with this job include:

Access CAMS menus and data screens
Open or close CAMS
Perform CAMS inquiries for scheduled aircraft discrepancies
Analyze CAMS data
Change CAMS errors noted during daily verification process
Clear or close out completed aircraft maintenance discrepancies in CAMS
Change CAMS workcenter event narratives
Change CAMS work unit codes

Respondents holding this job are more experienced than those in the previous jobs, averaging more then 12 years time in service. Only 5 percent are in their first enlistment, and the predominant paygrades (80 percent of the members) are E-5 through E-7. The majority (55 percent) hold the 7-skill level.

X. AIR REFUELING INSTRUCTOR JOB (STG230, N=12). This job is unique in that personnel are responsible for inspecting, investigating accidents and incidents, and overall maintaining of all air refueling systems used at each base. Incumbents of this rather narrow job perform an average of 79 tasks. Air Refueling Instructors report most of their duty time is focused on inspection of boom systems and the components which affect the normal operation of the boom. They are distinguished by the time they spend performing the following tasks:

Conduct inspections of organizational equipment
Inspect air refueling boom hydraulic systems
Inspect air refueling boom assemblies
Inspect air refueling boom fuel systems, other than in-progress inspections
Inspect air refueling boom electrical systems
Inspect air refueling boom control systems
Inspect air refueling boom signal systems
Inspect air refueling boom hoist systems
Inspect reservoir pressurization systems

Respondents holding this job are senior personnel averaging 13 1/2 years time in service. The predominant paygrades are E-5 through E-7, and no members are in their first enlistment. The majority (75 percent) hold the 5-skill level, and there are no members who hold the A-shred (Aero Repair).

XI. MANAGEMENT CLUSTER (STG072, N=47). Members performing jobs in this cluster constitute 2 percent of the overall sample. They are responsible for the management of pneudraulic maintenance work. This includes such things as filling out paperwork, inspecting personnel for compliance with military standards, coordination with other agencies, determining work priorities and schedules, and orienting newly assigned personnel. These personnel report spending 72 percent of their job time performing duties related to these functions, more time than any other job. The following are some common tasks performed by members of this cluster:

Establish performance standards for subordinates
Participate in meetings, such as staff meetings, briefings, conferences, or workshops
Write EPRs
Inspect personnel for compliance with military standards
Schedule leaves, passes, or temporary duty (TDY)
Counsel personnel on personal or military matters
Determine work priorities
Determine personnel requirements
Write recommendations for awards or decorations
Establish work schedules
Conduct performance feedback worksheet (PFW) sessions
Indorse enlisted performance reports (EPRs)

Eighty-nine percent hold the 7-skill level, while the remaining hold the 5-skill level. Members performing this job have an average of just over 16 years' time in service, more than any other group, with 93 percent in paygrades E-6 and E-7. One-fourth of the members have the A-shred (Aero Repair).

There were two job variations in this cluster. Members performing one variation spent more time on administrative tasks and CAMS functions, while the work of the other variation was characterized by organization and planning tasks.

XII. IN-SHOP PNEUDRAULICS CHIEF CLUSTER (STG184, N=95). Members performing this job represent 5 percent of the overall sample. They are primarily senior personnel, responsible for managing maintenance and repair functions with in-shop personnel. Incumbents perform an average of 161 tasks, the second highest in the career field. As senior personnel, incumbents of this job are responsible for evaluating in-shop aero repair and pneudraulics maintenance functions. Sixty-two percent of their job time is devoted to managerial, training, and administrative duties. Common tasks performed by In-Shop Chiefs include the following:

Determine work priorities
Certify status of reparable, serviceable, or condemned parts
Inventory equipment, tools, or supplies
Complete AF Forms 2005 (Issue/Turn-in Request)
Write EPRs
Coordinate maintenance problems with other agencies
Coordinate with base supply on obtaining parts
Conduct performance feedback worksheet (PFW) sessions
Inventory consolidated tool kits (CTKs)
Complete AF Forms 1297 (Temporary Issue Receipt)
Counsel personnel on personal or military matters
Review equipment forms

Respondents holding this job are very experienced, averaging over 13 years' time in service. Only 1 percent are in their first enlistment, and the predominant paygrades are E-6 and E-7. The majority (89 percent) hold the 7-skill level. Among the members of this job, 18 percent have the A-shred (Aero Repair).

There were two job variations within this cluster. Members performing one variation spent more time performing tasks related to directing aero repair shop functions, while the other variation was characterized by tasks which involved directing in-shop pneudraulic repair operations.

XIII. AERO REPAIR CLUSTER (STG105, N=387). This job is performed by the second largest number of respondents within the career ladder (387 members), comprising 19 percent of the sample. Members of this job report 31 percent of their job time is devoted to performing flight control systems functions and 15 percent of their time working with aero repair functions. Incumbents in

this moderately broad job perform an average of 111 tasks. They are responsible for adjusting, inspecting, removing, and installing flight control systems. Differing from pneudraulics repair, which is concentrated around smaller hydraulic subsystems, this job is primarily responsible for the larger components of the aircraft, such as elevators, aileron, and flaps. Typical tasks performed by members include:

Adjust components of flap systems
Troubleshoot malfunctions within aileron systems
Operationally check aileron systems
Troubleshoot malfunctions within wing flap systems
Remove or install components of elevator systems
Remove, repair, or install flight control surfaces
Remove or install components of aileron systems
Troubleshoot malfunctions within rudder systems
Troubleshoot malfunctions within elevator systems
Inspect flap systems
Operationally check elevator systems

Respondents holding this job average nearly 12 years' time in service. Ninety-five percent of these respondents hold the A-shred. The majority (80 percent) are in paygrade E-6, and over half hold the 5-skill level.

There were three job variations in this cluster, distinguished primarily by tasks unique to a particular aircraft. Members performing one variation spent more time performing tasks which involved cargo doors and ramps. The next variant was characterized by their work with nose landing gear, main landing gear, and wheel steering systems. The final variant performed tasks which involved bomb bay doors, wing sweep systems, structural mode control systems, and CAMS.

Comparison Of Current Group Descriptions To Previous Study

The results of the specialty job analysis were compared to the previous OSR, dated June 1984. Table 5 lists the major jobs identified in the 1992 report and their equivalent jobs from the 1984 OSR. A review of the jobs performed by the current sample indicates that 8 of the 13 1992 jobs were matched to similar jobs identified in the 1984 report. The five jobs not matched include B-1B Flightline Repair, C-141 In-Shop Pneudraulics, Supply, CAMS, and Aero Repair.

The Aircraft Pneudraulics career ladder is characterized by a fairly diverse job structure. Three substantially different clusters, Pneudraulics Repair, Aero Repair, and In-Shop Pneudraulics Repair, comprise the bulk of the specialty (75 percent). The remainder is distributed across specialized maintenance jobs and supporting administration, management, and training jobs. Aero Repair was not part of the career ladder when the 1984 survey was

TABLE 5

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1984 423X4 SURVEY

CURRENT SURVEY	1984 (423X4) SURVEY
PNEUDRAULICS REPAIR CLUSTER	FLIGHTLINE PNEUDRAULIC PERSONNEL CLUSTER GENERAL PNEUDRAULIC MECHANICS
B-1B FLIGHTLINE REPAIR	-
C-141 IN-SHOP PNEUDRAULICS	-
AIR REFUELING SYSTEMS MAINTENANCE	IN-FLIGHT REFUELING EQUIPMENT INSTRUCTOR
CUT	CUT
FTD TRAINERS	TRAINING SUPERVISORS/FTD INSTRUCTORS
IN-SHOP PNEUDRAULIC REPAIR	IN-SHOP PNEUDRAULIC REPAIRMEN
SUPPLY	-
CAMS	-
AIR REFUELING INSTRUCTOR JOB	PNEUDRAULIC IN-FLIGHT REFUELING EQUIPMENT MECHANICS
MANAGEMENT	PNEUDRAULIC FLIGHTLINE SUPERVISORS MAC INSPECTORS SAC QUALITY CONTROL PERSONNEL
IN-SHOP PNEUDRAULICS CHIEF	IN-SHOP PNEUDRAULIC SUPERVISORS AND SUPPORT PERSONNEL
AERO REPAIR	-

- Indicates no match in report

administered. Even though the Aero Repair has been merged into the Crew Chiefs (AFSC 457XX), the basic career ladder structure will not be greatly affected. Only three jobs will be substantially reduced in size due to the merger: FTD Trainers, Supply, and Aero Repair. In total, 551 airmen will be separated from the career ladder, but the basic structure will remain intact, minus the Aero Repair job.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may be used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the STS, reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups across the career ladder jobs is displayed in Table 6, while Table 7 offers another perspective by displaying percent time spent on each duty across the skill-level groups.

A typical pattern of progression is noted within the AFSC 454X4/A career ladder, with personnel at the 3-skill level spending most of their time on technical tasks. More relative time is spent on duties involving supervisory, managerial, and administrative tasks (see Table 7, Duties A, B, C, D, and E), as they move upward to the 5- and 7-skill levels.

Skill-Level Descriptions

DAFSC 45434. The 464 airmen in the 3-skill level group, representing 23 percent of the survey sample, perform an average of 113 tasks. As shown in Table 6, 55 percent of these airmen are in the Pneudraulics Repair cluster. They spend approximately 43 percent of their time performing flight control, landing gear, and utility systems maintenance functions, while 20 percent of their time is spent performing in-shop maintenance and administrative and supply functions (see Table 7).

Examples of tasks likely to be performed by 3-skill level personnel include: bleed hydraulic systems or components, access and utilize CAMS, and remove and install hydraulic components. Other examples of common tasks performed by a majority of these airmen are shown in Table 8.

DAFSC 45454. The 712 airmen in the 5-skill level group represent 35 percent of the total survey sample and perform an average of 141 tasks. Table 7 shows that 5-skill level personnel spend 49 percent of their relative job time performing duties which involve administrative tasks and maintenance of aircraft utility, flight control, and landing gear systems. The remaining 51 percent is spent on a broad range of technical and managerial duties, as shown in Table 9.

TABLE 6

DISTRIBUTION OF SKILL-LEVEL MEMBERS
ACROSS CAREER LADDER JOBS
(PERCENT)

JOB	45434 (N=464)	45454 (N=712)	45474 (N=305)	45434A (N=48)	45454A (N=357)	45474A (N=146)
PNEUDRAULICS REPAIR	55	65	47	0	18	13
B-1B FLIGHTLINE REPAIR	1	1	*	0	0	0
C-141 IN-SHOP PNEUDRAULICS	2	1	0	2	0	0
AIR REFUELING SYSTEMS MAINTENANCE	1	1	1	0	0	0
CROSS-UTILIZATION TRAINING (CUT)	2	2	0	2	1	0
FIELD TRAINING DETACHMENT	0	*	1	0	1	1
IN-SHOP PNEUDRAULICS REPAIR	19	12	2	4	0	0
SUPPLY	0	*	1	0	2	2
CORE AUTOMATED MAINTENANCE SYSTEM (CAMS)	*	1	4	0	1	0
AIR REFUELING INSTRUCTOR	0	5	15	0	1	10
MANAGEMENT	0	1	10	0	*	8
IN-SHOP PNEUDRAULICS CHIEF	0	5	15	0	1	10
AERO REPAIR	2	1	1	79	69	55
NOT GROUPED	18	5	3	13	6	1

* Denotes less than 1 percent

TABLE 7

TIME SPENT ON DUTIES BY MEMBERS OF SKILL-LEVEL GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	45434 (N=464)	45454 (N=712)	45474 (N=305)	45434A (N=48)	45454A (N=357)	45474A (N=146)
A ORGANIZING AND PLANNING	1	3	10	1	3	9
B DIRECTING AND IMPLEMENTING	*	3	8	*	2	7
C INSPECTING AND EVALUATING	1	4	12	1	4	11
D TRAINING	*	2	5	*	2	3
E PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	10	12	13	14	12	13
F PERFORMING UTILITY SYSTEMS FUNCTIONS	15	14	8	7	7	5
G PERFORMING PNEUDRAULIC POWER SYSTEMS FUNCTIONS	7	7	4	1	1	1
H PERFORMING FLIGHT CONTROL SYSTEMS FUNCTIONS	16	12	8	30	28	21
I PERFORMING LANDING GEAR SYSTEMS FUNCTIONS	12	11	7	11	12	9
J PERFORMING IN-SHOP MAINTENANCE OF AIRCRAFT PNEUDRAULIC COMPONENTS	10	7	4	1	*	*
K MAINTAINING SHOP AND AEROSPACE GROUND EQUIPMENT (AGE)	5	4	2	3	2	1
L PERFORMING CROSS-UTILIZATION TRAINING (CUT) DUTIES	5	6	3	5	6	4
M PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) FUNCTIONS	8	8	9	9	8	7
N PERFORMING AERO REPAIR FUNCTIONS	2	1	1	15	13	9
O PERFORMING AIR REFUELING SYSTEMS FUNCTIONS	7	6	5	*	*	*

* Denotes less than 1 percent

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY
45434 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=464)
F244	Bleed hydraulic systems or components	78
M639	Access CAMS menus and data screens	70
G360	Remove or install components of hydraulic power systems	67
G347	Inspect hydraulic power systems	66
G354	Operationally check hydraulic power systems	66
F295	Remove or install components of auxiliary hydraulic systems	63
F321	Service aircraft hydraulic systems	63
M656	Open or close CAMS	63
E200	Inventory consolidated tool kits (CTKs)	62
M646	Clear or close out completed aircraft maintenance discrepancies in CAMS	62
F272	Operationally check auxiliary hydraulic systems	61
I468	Bleed or service wheel brake systems	61
I488	Remove or install components of landing gear retraction or extension systems	61
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	61
F315	Remove or install pneudraulic hose assemblies	60
G348	Inspect hydraulic pressure indicating systems	58
H418	Operationally check rudder systems	58
H436	Remove or install components of rudder systems	58
F316	Remove or install tube assemblies	57
I484	Operationally check wheel brake systems	57
G352	Operationally check emergency hydraulic systems	57
I485	Remove or install components of aircraft wheel brake systems	56
G366	Troubleshoot malfunctions within hydraulic power systems	56
H440	Remove or install components of spoiler systems	55
G355	Operationally check hydraulic pressure indicating systems	55
F319	Service aircraft accumulators	55
I482	Operationally check landing gear normal extension and retraction systems	55
I474	Inspect nose wheel steering system components	55
I490	Remove or install components of nose wheel steering systems	55
H454	Troubleshoot malfunctions within rudder systems	55

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY
45454 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=712)
F244	Bleed hydraulic systems or components	79
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	71
G354	Operationally check hydraulic power systems	70
G360	Remove or install components of hydraulic power systems	69
E200	Inventory consolidated tool kits (CTKs)	69
G347	Inspect hydraulic power systems	69
I484	Operationally check wheel brake systems	68
F315	Remove or install pneudraulic hose assemblies	67
I468	Bleed or service wheel brake systems	67
I485	Remove or install components of aircraft wheel brake systems	67
M639	Access CAMS menus and data screens	66
G366	Troubleshoot malfunctions within hydraulic power systems	65
I488	Remove or install components of landing gear retraction or extension systems	65
I505	Troubleshoot malfunctions within wheel brake systems	65
F321	Service aircraft hydraulic systems	65
G348	Inspect hydraulic pressure indicating systems	63
F316	Remove or install tube assemblies	63
I477	Inspect wheel brake system components	63
F319	Service aircraft accumulators	62
G365	Troubleshoot malfunctions within hydraulic indicating systems	62
I476	Inspect shock struts	
G361	Remove or install components of hydraulic pressure indicating systems	60
H418	Operationally check rudder systems	60
I482	Operationally check landing gear normal extension and retraction systems	60
H436	Remove or install components of rudder systems	60
M656	Open or close CAMS	59
E151	Annotate AFTO Forms 781 Series (AFORM Aircrew/Mission Flight Data Document)	59
F245	Connect or disconnect portable hydraulic test stands to or from aircraft	59
F272	Operationally check auxiliary hydraulic systems	58
I471	Inspect landing gear extension or retraction components	58
I474	Inspect nose wheel steering system components	58

Although 5-skill level personnel spend almost half of their job time performing technical duties, it is the percent of job time spent on supervisory functions that distinguishes them from 3-skill level specialists. As is shown in Table 10, 5-skill members spend more time performing such tasks as counseling and inspecting personnel, establishing performance standards, and writing EPRs.

DAFSC 45474. Seven-skill level personnel represent 15 percent of the survey sample and perform an average of 148 tasks. Forty-eight percent of their relative job time is spent on tasks in supervisory, managerial, training, and administrative duties (more then twice that of 5-skill level personnel). The remaining 52 percent of their time, as can be seen in Table 11, is dedicated to technical duties such as accessing and closing CAMS, inspecting hydraulic power systems, and operationally checking hydraulic power systems.

Tasks which best distinguish 7-skill level personnel from their junior counterparts are presented in Table 12. As expected, the key difference is higher percentage of members performing supervisory functions such as counseling and inspecting personnel, writing recommendations and performance feedback worksheets, and clearing RED X conditions.

DAFSC 45434A. The 48 airmen in the A-shred 3-skill level group, representing 2 percent of the survey sample, perform an average of 120 tasks. As shown in Table 6, 79 percent of these airmen are in the Aero Repair cluster. Table 7 indicates they spend approximately 45 percent of their time performing flight control systems and aero repair maintenance functions, while 25 percent of their time is spent working with landing gear and performing administrative and supply functions.

Examples of tasks likely to be performed by A-shred, 3-skill level personnel include removing, repairing, and installing landing gear components and flight control surfaces, as shown by the representative tasks listed in Table 13. There were no members of this group who reported utilizing CAMS.

DAFSC 45454A. The 357 airmen in the A-shred 5-skill level group represent 18 percent of the total survey sample and perform an average of 146 tasks. Table 7 shows that 5-skill level personnel spend 53 percent of their relative job time performing duties which involve maintenance of flight control systems, landing gear, and aero repair functions. The remaining 47 percent is spent on a broad range of technical and managerial tasks comparable with those performed by the 3-skill level personnel. Representative tasks performed by A-shred 5-skill level incumbents include adjusting, checking and troubleshooting aileron and flap systems, and removing and installing components on main landing gear. A more extensive list of representative tasks performed by 5-skill level incumbents is listed in Table 14.

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 45434 AND DAFSC 45454 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		45434 (N=1176)	45454 (N=305)	DIFFERENCE
C104	Write EPRs	1	47	-46
B54	Supervise Aircraft Pneudraulic Systems Specialists (AFSC 45454)	4	48	-44
C68	Conduct performance feedback worksheet (PFW) sessions	2	44	-42
C66	Clear RED X conditions	2	37	-35
B34	Counsel personnel on personal or military matters	4	38	-34
A6	Determine work priorities	17	50	-33
A3	Coordinate maintenance problems with other agencies	12	45	-33
D118	Counsel trainees on training progress	3	34	-31
D112	Conduct EST or OJT	10	40	-30
C96	Inspect personnel for compliance with military standards	4	33	-29
B58	Supervise Apprentice Aircraft Pneudraulic Systems Specialists (AFSC 45434)	8	37	-29
C65	Certify status of reparable, serviceable, or condemned parts	8	37	-29
E154	Annotate DD Forms 1348-1 (DOD Single Line Item Release/Receipt Document)	19	48	-29
A15	Establish performance standards for subordinates	2	30	-28
B53	Orient newly assigned personnel	5	31	-26
C105	Write recommendations for awards or decorations	1	26	-25

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY 45474 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=305)
C104	Write EPRs	84
C66	Clear RED X conditions	78
C68	Conduct performance feedback worksheet (PFW) sessions	77
A3	Coordinate maintenance problems with other agencies	76
B34	Counsel personnel on personal or military matters	73
A6	Determine work priorities	71
A18	Participate in meetings, such as staff meetings, briefings, conferences, or workshops	70
M639	Access CAMS menus and data screens	69
C96	Inspect personnel for compliance with military standards	69
B54	Supervise Aircraft Pneudraulic Systems Specialists (AFSC 45454)	67
C105	Write recommendations for awards or decorations	64
A15	Establish performance standards for subordinates	64
E200	Inventory consolidated tool kits (CTKs)	63
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	63
M656	Open or close CAMS	62
C65	Certify status of reparable, serviceable, or condemned parts	62
E151	Annotate AFTO Forms 781 Series (AFORM Aircrew/Mission Flight Data Document)	61
E156	Annotate or complete AF Forms 979 (DANGER TAG)	61
E154	Annotate DD Forms 1348-1 (DOD Single Line Item Release/Receipt Document)	60
C99	Review equipment forms	59
B29	Schedule leaves, passes, or temporary duty (TDY)	58
E160	Attach or annotate equipment status labels or tags, such as DD Forms 1574 (Serviceable Tag - Materiel)	58
A17	Establish work schedules	57
B53	Orient newly assigned personnel	57
A1	Assign personnel to duty positions	56
A4	Determine personnel requirements	55
G347	Inspect hydraulic power systems	55
M657	Perform CAMS inquiries for scheduled aircraft discrepancies	54
B51	Interpret policies, directives, or procedures for subordinates	54
G354	Operationally check hydraulic power systems	54

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 45454 AND DAFSC 45474 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		45454 (N=712)	45474 (N=305)	DIFFERENCE
N704	Remove or install MLG components	39	16	23
N707	Remove or install NLG components	37	15	22
B29	Schedule leaves, passes, or temporary duty (TDY)	13	58	-45
B56	Supervise Aircraft Pneudraulic Systems Technicians (AFSC 45474)	7	49	-42
C105	Write recommendations for awards or decorations	26	67	-41
A18	Participate in meetings, such as staff meetings, briefings, conferences, or workshops	30	71	-41
A17	Establish work schedules	17	57	-40
C66	Clear RED X conditions	37	77	-40
C104	Write EPRs	47	84	-37
A4	Determine personnel requirements	19	55	-36
C96	Inspect personnel for compliance with military standards	33	69	-36
B34	Counsel personnel on personal or military matters	38	73	-35
A2	Assign sponsors for newly assigned personnel	10	45	-35
A15	Establish performance standards for subordinates	30	64	-34
C68	Conduct performance feedback worksheet (PFW) sessions	44	77	-33

TABLE 13

REPRESENTATIVE TASKS PERFORMED BY 45434A PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=48)
H370	Adjust components of flap systems	88
H408	Operationally check aileron systems	83
H418	Operationally check rudder systems	83
H423	Operationally check wing flap systems	81
H427	Remove or install components of aileron systems	81
N703	Remove or install MLG assemblies	79
H372	Adjust components of pitch trim systems	79
H436	Remove or install components of rudder systems	79
N705	Remove or install MLG door assemblies	77
N704	Remove or install MLG components	77
N711	Remove, repair, or install flight control surfaces	77
I482	Operationally check landing gear normal extension and retraction systems	75
H392	Inspect flap systems	75
H386	Inspect aileron systems	75
H430	Remove or install components of flap systems	75
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	75
H371	Adjust components of horizontal tail or stabilizer systems	75
H444	Troubleshoot malfunctions within aileron systems	75
H454	Troubleshoot malfunctions within rudder systems	75
N673	Adjust throttle control mechanical components	73
L599	Jack or level aircraft	73
H412	Operationally check elevator systems	73
H429	Remove or install components of elevator systems	73
H426	Perform flight control systems rigging checks	71
I480	Operationally check landing gear emergency systems	71
I488	Remove or install components of landing gear retraction or extension systems	71
N706	Remove or install nose landing gear (NLG) assemblies	71
H373	Adjust components of roll trim systems	71
N688	Operationally check throttle control mechanical components	71
N719	Troubleshoot malfunctions within throttle control mechanical systems	71

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY 45454A PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=357)
H370	Adjust components of flap systems	89
H408	Operationally check aileron systems	87
H444	Troubleshoot malfunctions within aileron systems	87
N704	Remove or install MLG components	85
I482	Operationally check landing gear normal extension and retraction systems	85
H427	Remove or install components of aileron systems	85
H459	Troubleshoot malfunctions within wing flap systems	85
H429	Remove or install components of elevator systems	85
H447	Troubleshoot malfunctions within elevator systems	84
H412	Operationally check elevator systems	84
H454	Troubleshoot malfunctions within rudder systems	83
H392	Inspect flap systems	83
H423	Operationally check wing flap systems	83
H430	Remove or install components of flap systems	82
N703	Remove or install MLG assemblies	82
H418	Operationally check rudder systems	82
L599	Jack or level aircraft	82
N711	Remove, repair, or install flight control surfaces	80
H386	Inspect aileron systems	80
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	80
I488	Remove or install components of landing gear retraction or extension systems	80
I466	Adjust components of nose wheel steering systems	80
I483	Operationally check nose wheel steering systems	80
H426	Perform flight control systems rigging checks	80
N706	Remove or install nose landing gear (NLG) assemblies	79
N707	Remove or install NLG components	79
I471	Inspect landing gear extension or retraction components	79
I490	Remove or install components of nose wheel steering systems	78
H436	Remove or install components of rudder systems	78
I474	Inspect nose wheel steering system components	78

Although A-shred 5-skill level personnel spend more than half of their job time performing technical duties, there is an increase in the number of managerial tasks performed which distinguishes them from the A-shred 3-skill level members. Table 15 gives examples of tasks which best distinguish A-shred 5-skill level personnel from the A-shred 3-skill members. The data indicate there is a higher percentage of 5-level members who perform supervisory tasks, such as counseling and providing feedback for personnel, writing recommendations, and clearing RED X conditions.

DAFSC 45474A. Seven-skill level personnel, who hold the A-shred, constitute 7 percent of the survey sample and perform an average of 157 tasks. Forty-three percent of their relative job time is spent on tasks in supervisory, managerial, training, and administrative duties. The A-shred 7-skill level personnel are more involved with technical tasks than their 45474 counterparts. These technical tasks include inspecting, troubleshooting, and adjusting components of flap systems, rudder systems, and aileron systems. In addition to this, incumbents report performing tasks which involve both main landing gear and nose wheel steering system components. Table 16 provides a list of representative tasks for these incumbents.

Tasks which best distinguish 7-skill level personnel from the 5-skill A-shred personnel are presented in Table 17. As the table shows, a higher percentage of 7-skill A-shred personnel perform supervisory and managerial tasks, such as establishing work schedules and writing EPRs.

Summary

A typical career ladder progression within the AFSC 454X4/A career ladder is evident, with personnel at the 3-skill level spending the vast majority of their job time performing technical tasks. A moderate shift towards supervisory functions occurs at the 5-skill level, with members still spending more than 75 percent of their duty time performing technical functions. Personnel at the 7-skill level primarily perform supervisory functions, although a small percentage of their time is still spent on technical duties. Due to the fact that the Aero Repair function has been taken out of the specialty, the career ladder will be less complicated.

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

Survey data were compared to the AFR 39-1 Specialty Descriptions for Aircraft Pneudraulic Systems Specialists and Technicians, dated 15 March 1991, effective 30 April 1991. The descriptions for the 3-, 5-, and 7-skill levels were generally accurate, depicting the highly technical aspects of the job, as well as the increase in supervisory responsibilities previously described in the DAFSC analysis. The descriptions also capture the primary responsibilities of members in the 13 jobs identified by the job structure analysis process.

TABLE 15

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 45434A AND DAFSC 45454A PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		45434A (N=48)	45454A (N=357)	DIFFERENCE
K583	Perform in-shop operational checks on hydraulic jacks	44	22	22
C104	Write EPRs	2	48	-46
C66	Clear RED X conditions	4	50	-46
C68	Conduct performance feedback worksheet (PFW) sessions	6	48	-42
C65	Certify status of reparable, serviceable, or condemned parts	15	50	-35
B55	Supervise Aircraft Pneudraulic Systems Specialists (AFSC 45454A Aero Repair)	8	38	-30
D112	Conduct EST or OJT	10	39	-29
A3	Coordinate maintenance problems with other agencies	25	52	-27
C99	Review equipment forms	23	48	-25
C105	Write recommendations for awards or decorations	4	29	-25
A6	Determine work priorities	27	52	-25
B34	Counsel personnel on personal or military matters	10	34	-24
I466	Adjust components of nose wheel steering systems	56	80	-24
E182	Complete AFTO Forms 244 (Industrial/Support Equipment Record)	23	46	-23
D118	Counsel trainees on training progress	6	29	-23
I483	Operationally check nose wheel steering systems	58	80	-22

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY
45474A PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=146)
C66	Clear RED X conditions	82
A3	Coordinate maintenance problems with other agencies	80
C104	Write EPRs	80
A6	Determine work priorities	78
H392	Inspect flap systems	78
H459	Troubleshoot malfunctions within wing flap systems	77
H370	Adjust components of flap systems	77
H444	Troubleshoot malfunctions within aileron systems	76
H447	Troubleshoot malfunctions within elevator systems	76
E156	Annotate or complete AF Forms 979 (DANGER TAG)	75
E151	Annotate AFTO Forms 781 Series (AFORM Aircrew/Mission Flight Data Document)	75
H386	Inspect aileron systems	75
C68	Conduct performance feedback worksheet (PFW) sessions	75
H454	Troubleshoot malfunctions within rudder systems	74
N704	Remove or install MLG components	71
H423	Operationally check wing flap systems	71
H408	Operationally check aileron systems	71
I474	Inspect nose wheel steering system components	71
H429	Remove or install components of elevator systems	71
H426	Perform flight control systems rigging checks	69
E200	Inventory consolidated tool kits (CTKs)	69
N703	Remove or install MLG assemblies	69
C105	Write recommendations for awards or decorations	69
I475	Inspect nose wheel steering systems	69
I483	Operationally check nose wheel steering systems	69
H412	Operationally check elevator systems	69
B34	Counsel personnel on personal or military matters	69
I482	Operationally check landing gear normal extension and retraction systems	68
H430	Remove or install components of flap systems	68
I471	Inspect landing gear extension or retraction components	68

TABLE 17

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 45454A AND DAFSC 45474A PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		45454A (N=357)	45474A (N=146)	DIFFERENCE
L609	Position nonpowered or powered AGE to aircraft	53	31	22
K575	Clean tools	66	45	21
B29	Schedule leaves, passes, or temporary duty (TDY)	11	55	-44
A17	Establish work schedules	17	58	-41
C105	Write recommendations for awards or decorations	29	69	-40
B34	Counsel personnel on personal or military matters	34	69	-35
B57	Supervise Aircraft Pneudraulic Systems Technicians (AFSC 45474A Aero Repair)	19	53	-34
B35	Direct aero repair shop functions	25	59	-34
C66	Clear RED X conditions	50	82	-32
A4	Determine personnel requirements	21	53	-32
C104	Write EPRs	48	80	-32
C93	Evaluate work schedules	7	39	-32
A1	Assign personnel to duty positions	22	53	-32
C96	Inspect personnel for compliance with military standards	36	68	-32
A2	Assign sponsors for newly assigned personnel	6	37	-31

Aero Repair was not included in the current AFR 39-1. Therefore, the current AFR 39-1 specialty descriptions remain accurate despite the loss of the Aero Repair function.

TRAINING ANALYSIS

Occupational survey data are sources of information which can be used to assist in the development of relevant training programs for entry-level personnel. Factors used to evaluate entry-level Aircraft Pneudraulic Systems training include jobs being performed by first-enlistment personnel, overall distribution of first-enlistment personnel across career ladder jobs, percent first-job (1-24 month TAFMS) and first-enlistment (1-48 months TAFMS) members performing specific tasks or using specific equipment items, ratings of how much training emphasis tasks should receive in formal training, and ratings of relative TD.

First-Enlistment Personnel

In this study, there are 627 AFSC 454X4 and 61 A-shred members in their first enlistment (1-48 months TAFMS), representing 34 percent of the survey sample. As displayed in Table 18, approximately 97 percent of their duty time is devoted to performing technical and administrative tasks. AFSC 454X4 personnel spend the majority of their job time in four areas: Utility Systems Functions (16 percent); Flight Control System functions (15 percent); Landing Gear Systems functions (12 percent); Administrative and Supply functions (10 percent). A-shred personnel in their first enlistment perform similar tasks; however, they are more focused in two duties: Flight Control Systems functions (32 percent) and Aero Repair (16 percent). The vast majority of first-enlistment personnel are involved in day-to-day Aircraft Pneudraulics maintenance and Aero Repair activities. Table 19 shows typical tasks performed by Aircraft Pneudrualics first-enlistment personnel, most of which deal with technical tasks such as bleeding hydraulic systems and wheel brake systems, opening or closing CAMS, and removing and installing tube assemblies. Table 20 presents typical tasks performed by Aero Repair first-enlistment personnel and includes such tasks as adjusting, inspecting, removing and replacing components of flap and rudder systems; and working with both nose wheel steering and main landing gear systems. Pneudraulic Repair personnel show a higher percentage of utilizing such items as boom signal systems testers, brake test sets, hose assemble machines, and hydraulic hose test units. Aero Repair personnel indicate that they utilize such items as aircraft jacking manifolds, cable tensiometers, rigging pins, and wing jacks more often then those who do not hold the A-shred. A complete listing of items used by 30 percent or more of first-job and first-enlistment is displayed in Table 21.

Within the groups identified in the SPECIALTY JOBS section of this report, first-enlistment personnel were present in 10 of the 13 jobs. As shown in Figure 2, 63 percent of first-enlistment personnel surveyed are grouped in the Pneudraulics Repair cluster.

TABLE 18

RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES BY FIRST ENLISTMENT AFSC 454X4 AND 454X4A PERSONNEL

TASKS	PERCENT TIME SPENT 454X4	PERCENT TIME SPENT 454X4A
A ORGANIZING AND PLANNING	1	1
B DIRECTING AND IMPLEMENTING	1	*
C INSPECTING AND EVALUATING	1	1
D TRAINING	*	1
E PERFORMING ADMINISTRATIVE AND SUPPLY FUNCTIONS	10	10
F PERFORMING UTILITY SYSTEMS FUNCTIONS	16	8
G PERFORMING PNEUDRAULIC POWER SYSTEMS FUNCTIONS	7	1
H PERFORMING FLIGHT CONTROL SYSTEMS FUNCTIONS	15	32
I PERFORMING LANDING GEAR SYSTEMS FUNCTIONS	12	12
J PERFORMING IN-SHOP MAINTENANCE OF AIRCRAFT PNEUDRAULIC COMPONENTS	9	1
K MAINTAINING SHOP AND AEROSPACE GROUND EQUIPMENT (AGE)	5	3
L PERFORMING CROSS-UTILIZATION TRAINING (CUT) DUTIES	5	5
M PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) FUNCTIONS	8	8
N PERFORMING AERO REPAIR FUNCTIONS	2	16
O PERFORMING AIR REFUELING SYSTEMS FUNCTIONS	7	*

* Denotes less than 1 percent

NOTE: Columns may not add up to 100 percent due to rounding

TABLE 19

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT 454X4 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING 454X4 (N=627)
F244	Bleed hydraulic systems or components	78
M639	Access CAMS menus and data screens	69
G360	Remove or install components of hydraulic power systems	68
G354	Operationally check hydraulic power systems	68
G347	Inspect hydraulic power systems	67
F321	Service aircraft hydraulic systems	64
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	63
F315	Remove or install pneudraulic hose assemblies	63
F295	Remove or install components of auxiliary hydraulic systems	63
I468	Bleed or service wheel brake systems	63
I488	Remove or install components of landing gear retraction or extension systems	63
E200	Inventory consolidated tool kits (CTKs)	63
M656	Open or close CAMS	62
M646	Clear or close out completed aircraft maintenance discrepancies in CAMS	62
F272	Operationally check auxiliary hydraulic systems	62
G348	Inspect hydraulic pressure indicating systems	61
G352	Operationally check emergency hydraulic systems	61
H418	Operationally check rudder systems	60
H436	Remove or install components of rudder systems	60
I484	Operationally check wheel brake systems	60
I485	Remove or install components of aircraft wheel brake systems	60
F316	Remove or install tube assemblies	59
G366	Troubleshoot malfunctions within hydraulic power systems	59
F319	Service aircraft accumulators	59
G355	Operationally check hydraulic pressure indicating systems	58
I482	Operationally check landing gear normal extension and retraction systems	57
H440	Remove or install components of spoiler systems	57
H422	Operationally check spoiler systems	56
G361	Remove or install components of hydraulic pressure indicating systems	56
I476	Inspect shock struts	56

TABLE 20

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT 454X4A PERSONNEL

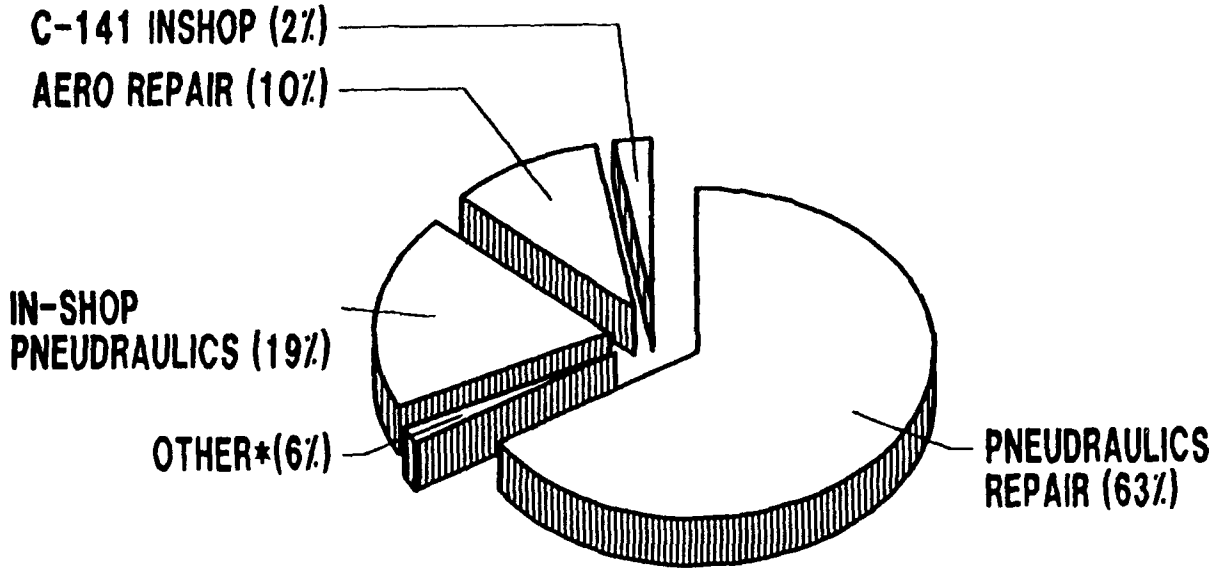
TASKS		PERCENT MEMBERS PERFORMING 454X4A (N=61)
H370	Adjust components of flap systems	90
H427	Remove or install components of aileron systems	85
H408	Operationally check aileron systems	84
H423	Operationally check wing flap systems	84
H418	Operationally check rudder systems	82
H392	Inspect flap systems	79
H430	Remove or install components of flap systems	79
H372	Adjust components of pitch trim systems	79
H371	Adjust components of horizontal tail or stabilizer systems	79
I482	Operationally check landing gear normal extension and retraction systems	77
N704	Remove or install MLG components	77
H444	Troubleshoot malfunctions within aileron systems	77
H436	Remove or install components of rudder systems	77
N711	Remove, repair, or install flight control surfaces	75
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	75
N703	Remove or install MLG assemblies	75
I488	Remove or install components of landing gear retraction or extension systems	
H454	Troubleshoot malfunctions within rudder systems	75
L599	Jack or level aircraft	75
H386	Inspect aileron systems	74
H429	Remove or install components of elevator systems	74
H426	Perform flight control systems rigging checks	72
H412	Operationally check elevator systems	72
H459	Troubleshoot malfunctions within wing flap systems	72
H432	Remove or install components of horizontal tail or stabilizer systems	72
N673	Adjust throttle control mechanical components	70
I480	Operationally check landing gear emergency systems	70
H373	Adjust components of roll trim systems	70
H458	Troubleshoot malfunctions within spoiler systems	70

TABLE 21

EQUIPMENT ITEMS USED BY MORE THAN 30 PERCENT OF FIRST JOB OR FIRST-ENLISTMENT AFSC 454X4/A PERSONNEL

EQUIPMENT	454X4 1ST JOB (N=295)	454X4 1ST ENL (N=627)	454X4A 1ST JOB (N=22)	454X4A 1ST ENL (N=61)
AIR NITROGEN COMPRESSORS	36	35	14	16
AIRCRAFT JACKING MANIFOLDS	25	25	77	90
ALIGNMENT PINS	28	30	41	54
AXLE JACKS	29	31	45	64
BOOM SIGNAL SYSTEM TESTERS	27	31	0	0
BRAKE TEST SETS	31	36	0	0
CABLE TENSIOMETERS	36	40	82	89
COMPUTERS	55	59	64	66
DEGREASERS	37	38	36	36
DIAL INDICATORS	24	27	1	30
GENERATOR SETS	22	24	36	43
HOISTS	32	34	45	62
HOSE ASSEMBLY MACHINES	47	50	18	11
HOSE CUT OFF/SKIVING MACHINES	48	50	18	11
HYDRAULIC GROUND SERVICING CARTS	72	75	27	31
HYDRAULIC HOSE TEST UNITS	43	43	14	8
LITE-ALLS	39	47	55	57
MICROMETERS	43	47	64	62
MULTIMETERS	63	68	18	28
NOZZLE TESTERS	28	30	0	0
PNEUMATIC TEST STANDS	38	39	14	7
PORTABLE CRANES	9	9	36	36
PORTABLE HYDRAULIC TEST STANDS	55	58	18	16
PROTRACTORS	15	16	45	59
RIGGING PINS	48	56	82	92
RIGGING/TEST SETS	16	18	45	51
SERVICING CARTS	56	60	27	26
SHOP HYDRAULIC TEST STANDS	45	47	14	8
SLINGS	28	34	68	72
SPANNER WRENCHES	82	86	82	80
SPRING COMPRESSORS OR TESTERS	31	33	23	30
STOP WATCHES	27	30	36	44
TORQUE WRENCHES	94	95	100	97
WING JACKS	34	33	68	79

JOBS PERFORMED BY FIRST-ENLISTMENT AFSC 454X4/A PERSONNEL



B-1B FLIGHTLINE REPAIR
C-141 INSHOP
AIR REFUELING
CUT
SUPPLY
CAMS
IN-SHOP CHIEF

FIGURE 2

Training Emphasis and Task Difficulty Data

TE and TD data are secondary task factors that can help training development personnel decide which tasks to emphasize for entry-level training. These ratings, based on the judgments of senior career ladder NCOs at operational units, provide a rank-ordering of those tasks considered important for first-enlistment airman training (TE) and a measure of the relative difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel. These decisions must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist training development personnel, USAFOMS developed a computer program that uses these task factors and the percentage of first-enlistment personnel performing tasks to produce Automated Training Indicators (ATI). ATI correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, ATCR 52-22. ATI allows training developers to quickly focus attention on those tasks which are most likely to qualify for ABR course consideration.

Tasks having the highest TE ratings for both the slick and the A-shred are listed in Table 22 and 23. Included for each task are the percentage of first-job and first-enlistment personnel performing and the TD rating. As illustrated in Table 22, tasks with the highest pneudraulics TE ratings deal with maintaining, troubleshooting, and operationally checking hydraulic systems, and are performed by high percentages of first-job, first-enlistment personnel. Table 23 lists the highest A-shred TE ratings, and these tasks deal with removing or installing, operationally checking, and troubleshooting flap, aileron, elevator, and rudder systems. The table also illustrates the high percentages of first job and first enlistment performing these tasks.

Tables 24 and 25 list the tasks having the highest TD ratings. Table 24 lists the slick TD ratings, while Table 25 covers the highest A-shred TD ratings. The percentage of first-enlistment, first-job, 5-, and 7-skill level personnel performing, and TE rating are also included for each task. Most tasks with high TD ratings are supervisory and administrative functions, are performed by quite low percentages of first-job, first-enlistment, 5- and 7-skill level members, and have low TE ratings. The few technical tasks with high TD ratings also have high TE ratings and are performed by high percentages of both slick and A-shred respondents.

Various lists of tasks, accompanied by TE and TD ratings, are contained in the TRAINING EXTRACT package and should be reviewed in detail by technical school personnel. For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the SURVEY METHODOLOGY section of this report.

TABLE 22

PNEUDRAULICS TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	TSK DIFF
F244	Bleed hydraulic systems or components	6.94	78	78	4.39
G354	Operationally check hydraulic power systems	6.85	65	68	4.76
G355	Operationally check hydraulic pressure indicating systems	6.42	53	58	4.32
G347	Inspect hydraulic power systems	6.36	65	67	4.89
G360	Remove or install components of hydraulic power systems	6.30	64	68	4.88
I468	Bleed or service wheel brake systems	6.24	56	63	4.31
F245	Connect or disconnect portable hydraulic test stands to or from aircraft	6.12	46	51	4.58
E201	Inventory equipment, tools, or supplies	6.00	43	50	2.72
G352	Operationally check emergency hydraulic systems	5.97	59	61	4.16
F321	Service aircraft hydraulic systems	5.94	63	64	3.04
G366	Troubleshoot malfunctions within hydraulic power systems	5.91	51	60	6.03
E200	Inventory consolidated tool kits (CTKs)	5.91	58	63	2.74
G348	Inspect hydraulic pressure indicating systems	5.82	55	61	4.73
F316	Remove or install tube assemblies	5.82	52	59	3.77
I496	Service aircraft shock struts	5.82	44	47	4.00
F319	Service aircraft accumulators	5.79	54	59	3.51
G361	Remove or install components of hydraulic pressure indicating systems	5.76	48	56	4.47
F336	Troubleshoot malfunctions within hydraulic systems using schematics or diagrams	5.73	42	49	7.05
F315	Remove or install pneudraulic hose assemblies	5.70	58	63	3.88
E151	Annotate AFTO Forms 781 Series (AFORM Aircrew/Mission Flight Data Document)	5.64	44	49	3.55
I471	Inspect landing gear extension or retraction components	5.61	50	55	5.50
F250	Inspect auxiliary hydraulic systems	5.52	51	55	4.45

TE MEAN = 2.15 S.D. = 1.54 (High = 3.69)
TD MEAN = 5.00 S.D. = 1.00

TABLE 22 (CONTINUED)

PNEUDRAULICS TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	TSK DIFF
I484	Operationally check wheel brake systems	5.52	53	60	4.34
J564	Fabricate rubber hose assemblies	5.52	39	41	4.43
I477	Inspect wheel brake system components	5.48	44	53	4.50
J565	Fabricate teflon hose assemblies	5.48	35	38	4.44
I485	Remove or install components of aircraft wheel brake systems	5.48	35	38	4.44
G346	Adjust hydraulic components of pneudraulic power systems	5.42	51	60	4.78
I488	Remove or install components of landing gear retraction or extension systems	5.42	59	63	5.89
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	5.39	57	63	3.29

TE MEAN = 2.15 S.D. = 1.54 (High = 3.69)
TD MEAN = 5.00 S.D. = 1.00

TABLE 23

AERO REPAIR TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	TSK DIFF
H423	Operationally check wing flap systems	6.80	82	84	4.81
H426	Perform flight control systems rigging checks	6.68	59	72	6.59
H386	Inspect aileron systems	6.66	68	74	4.90
H418	Operationally check rudder systems	6.39	82	82	5.01
H427	Remove or install components of aileron systems	6.27	77	85	5.38
H447	Troubleshoot malfunctions within elevator systems	6.27	55	69	6.33
H430	Remove or install components of flap systems	6.27	73	79	5.26
H454	Troubleshoot malfunctions within rudder systems	6.14	68	75	6.34
H422	Operationally check spoiler systems	6.11	59	69	5.09
H429	Remove or install components of elevator systems	6.07	59	74	5.61
H408	Operationally check aileron systems	6.05	86	84	5.10
I482	Operationally check landing gear normal extension and retraction systems	6.00	68	77	5.59
H392	Inspect flap systems	5.98	73	79	5.00
N703	Remove or install MLG assemblies	5.95	64	75	6.28
N704	Remove or install MLG components	5.95	68	77	5.58
I466	Adjust components of nose wheel steering systems	5.91	36	56	5.60
H412	Operationally check elevator systems	5.89	68	72	5.08
H444	Troubleshoot malfunctions within aileron systems	5.89	64	77	6.28
I474	Inspect nose wheel steering system components	5.84	36	61	4.60
H459	Troubleshoot malfunctions within wing flap systems	5.80	55	72	6.32
I475	Inspect nose wheel steering systems	5.77	32	57	4.76
H370	Adjust components of flap systems	5.77	82	90	6.06
N706	Remove or install nose landing gear (NLG) assemblies	5.70	45	64	6.27
N711	Remove, repair, or install flight control surfaces	5.68	64	75	6.18
I463	Adjust components of landing gear emergency systems	5.68	45	56	5.26

TE MEAN = 1.57 S.D. = 1.54 (High = 3.11)
TD MEAN = 5.00 S.D. = 1.00

TABLE 23 (CONTINUED)

AERO REPAIR TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	TSK DIFF
H401	Inspect rudder systems	5.66	45	54	4.92
L599	Jack or level aircraft	5.61	64	75	4.83
H436	Remove or install components of rudder systems	5.59	68	77	5.57
N688	Operationally check throttle control mechanical components	5.59	59	62	5.45
I483	Operationally check nose wheel steering systems	5.57	27	57	5.20

TE MEAN = 1.57 S.D. = 1.54 (High = 3.11)
TD MEAN = 5.00 S.D. = 1.00

TABLE 24

SAMPLE OF PNEUDRAULICS TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS		TSK DIFF	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	45454	45474	TNG EMP
A14	Establish organizational policies, office instructions (OIs), or standard operating procedures (SOPs)	7.82	1	0	5	24	.61
D122	Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)	7.81	0	0	3	8	.30
A12	Draft budget or financial requirements	7.67	1	1	3	15	.18
A25	Prepare agenda for symposiums, conferences, or workshops	7.49	0	1	3	11	.36
N689	Recover disabled aircraft from runways or taxiways	7.49	1	4	7	5	.64
C106	Write staff studies, surveys, or special reports, other than training reports	7.46	0	0	2	15	.18
D121	Develop career development courses (CDCs) or curricula materials	7.31	0	0	1	4	.30
F342	Troubleshoot malfunctions within pneumatic systems using schematics or diagrams	7.08	14	17	21	13	3.39
F336	Troubleshoot malfunctions within hydraulic systems using schematics or diagrams	7.05	42	49	53	40	5.73
B43	Draft higher headquarters directives	7.03	0	0	2	5	.30
C69	Conduct staff assistance visits	6.94	0	0	2	8	.42
D150	Write test questions	6.91	1	0	4	9	.03
N710	Remove, fold, or install vertical fin assemblies	6.90	1	1	2	0	.12
H460	Troubleshoot malfunctions within wing sweep systems	6.87	3	2	2	2	1.73
H374	Adjust components of slat syster	6.86	7	6	8	4	1.97
D124	Develop performance tests	6.79	0	0	5	11	.30
D113	Conduct field training detachment (FTD) training	6.78	0	0	1	5	.58
B33	Conduct staff meetings	6.76	0	0	3	14	.18
H455	Troubleshoot malfunctions within slat systems	6.76	11	10	13	7	2.45

TD MEAN = 5.00 S.D. = 1.00
TE MEAN = 2.15 S.D. = 1.54 (HIGH = 3.69)

TABLE 24 (CONTINUED)

SAMPLE OF PNEUDRAULICS TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS		TSK DIFF	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	45454	45474	TNG EMP
I500	Troubleshoot malfunctions within landing gear crosswind positioning systems	6.74	7	9	10	10	1.88
H458	Troubleshoot malfunctions within spoiler systems	6.72	41	51	53	37	4.85
B44	Implement cost reduction programs	6.71	1	1	4	14	.58
A13	Establish inspection procedures	6.71	4	4	11	34	.85
I502	Troubleshoot malfunctions within landing gear kneeling systems	6.68	6	6	9	7	1.91
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	6.68	41	50	54	44	4.42
H449	Troubleshoot malfunctions within folding rotor head or tail rotor systems	6.65	1	1	2	2	1.21
D123	Develop new equipment training programs	6.65	0	0	2	8	.30
C74	Evaluate budget or financial requirements	6.63	1	1	2	10	.18
H445	Troubleshoot malfunctions within artificial feel systems	6.62	10	10	9	7	2.12
B61	Supervise foreign nationals	6.62	0	0	2	3	.03

TD MEAN = 5.00 S.D. = 1.00
TE MEAN = 2.15 S.D. = 1.54 (HIGH = 3.69)

TABLE 25

SAMPLE OF AERO REPAIR TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS		TSK DIFF	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	45454A	45474A	TNG EMP
A12	Draft budget or financial requirements	8.00	0	0	3	11	.75
D121	Develop career development courses (CDCs) or curricula materials	7.47	0	2	1	1	.18
B43	Draft higher headquarters directives	7.30	0	2	1	3	.30
D122	Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)	7.27	0	0	2	6	.27
A25	Prepare agenda for symposiums, conferences, or workshops	7.25	0	2	2	9	.25
J559	Bench check or repair rudder PCUs	7.24	0	2	1	1	.39
J558	Bench check or repair rudder boost packs	7.11	0	0	1	1	.50
L618	Remove or install engines	7.04	0	7	15	9	.64
F345	Troubleshoot malfunctions within spike systems	6.99	0	0	0	0	.43
F326	Troubleshoot malfunctions within engine thrust reverser systems	6.94	0	2	12	10	1.05
C106	Write staff studies, surveys, or special reports, other than training reports	6.92	0	2	3	11	.43
L603	Operationally check aircraft engines	6.83	0	2	10	5	.95
0767	Troubleshoot malfunctions within air refueling systems	6.83	0	2	1	0	.09
J560	Bench check or repair shock struts	6.75	0	2	3	2	.55
C74	Evaluate budget or financial requirements	6.75	0	0	1	9	.43
0770	Troubleshoot malfunctions within IFR pod systems	6.73	0	0	1	0	.09
I503	Troubleshoot malfunctions within landing gear rotation systems	6.70	23	23	24	21	2.57
A20	Plan layout of facilities	6.68	0	0	3	11	.25
J554	Bench check or repair power drive units (PDUs)	6.67	0	2	1	1	.34
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	6.67	68	75	80	66	4.52

TD MEAN = 5.00 S.D. = 1.00
TE MEAN = 1.57 S.D. = 1.54 (HIGH = 3.11)

TABLE 25 (CONTINUED)

SAMPLE OF AERO REPAIR TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS		TSK DIFF	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	45454A	45474A	TNG EMP
J532	Bench check or repair elevator boost packs	6.66	0	0	1	1	.50
I495	Repack shock struts on aircraft	6.64	32	38	30	25	3.11
A14	Establish organizational policies, office instructions (OIs), or standard operating procedures (SOPs)	6.63	0	0	3	23	.55
F243	Adjust spike systems	6.61	5	2	1	0	.09
N689	Recover disabled aircraft from runways or taxiways	6.60	27	33	51	53	3.93
N718	Troubleshoot malfunctions within RLDs	6.60	5	3	4	2	.32
F336	Troubleshoot malfunctions within hydraulic systems using schematics or diagrams	6.59	5	8	19	14	1.41
J515	Bench check or repair aileron boost packs	6.59	0	0	1	1	.50
J562	Bench check or repair spoiler PCUs	6.59	0	0	1	1	.34
H426	Perform flight control systems rigging checks	6.59	59	72	80	69	6.68

TD MEAN = 5.00 S.D. = 1.00
TE MEAN = 1.57 S.D. = 1.54 (HIGH = 3.11)

Specialty Training Standard (STS)

Technical school personnel from the Sheppard Training Center matched job inventory tasks to sections and subsections of the Aircraft Pneudraulic Systems STS and to the ABR45435 Plan of Instruction (POI). Listings of the STS and POI were then produced, showing tasks matched, percent members performing the tasks, and TE and TE ratings for each matched task. These listings are included in the Training Extract sent to the school for review. Criteria set forth in AFR 8-13, AFR 8-13/ATC supplement 1 (Attachment 1, paragraph A1-3c(4)), and ATCR 52-22 Attachment 1, were used to review the relevance of each STS element that had inventory tasks matched to it. Any element with matched tasks performed by 20 percent or more first-job, first-enlistment, 5-, or 7-skill level 454X4/A members is considered to be supported and should be part of the STS.

AFSC 454X4/A STS. Paragraphs 1 through 8 deal with general topics of security, AFOSH, maintenance management, inspection, supervision, training, publications, and supply discipline. Because paragraphs 1 through 8 deal with general topics, they were not reviewed. Paragraphs 9 through 20 cover the common aspects of the career ladder. These paragraphs include 63 individual line items, 38 of which have tasks matched.

Using standard ATC criteria and percentages of first-job, first enlistment, 5-, and 7-skill level 454X4/A members performing matched tasks, all but six line items are supported by survey data. Five of the six unsupported line items were in paragraph 9b-Maintenance Materials and included common aircraft hardware (line item 9b(2)(a)), fluids (line item 9b(3)), lubricants (line item 9b(4)), cleaning agents (line item 9b(5)), and sealants (line item 9b(6)). The last unsupported line item was found in paragraph 20c and concerns inspection of aircraft crash recovery. These six unmatched line items, with accompanying survey data, are listed in Table 26.

One STS line item, paragraph 9e(8), deals with performing adjustments on hydraulic systems. This line item is matched to tasks performed by very high percentages of criterion group members and has high TE and TD ratings, but has a dash (-) training code, meaning students in the entry-level course are not taught how to adjust certain items. Because these functions are not taught in the entry-level course, but are performed by high percentages of personnel, training personnel need to either ensure they are adequately covered by the OJT curriculum or may consider adding these tasks into the entry-level course.

There are a few technical tasks performed by more then 20 percent of all respondents that are not matched to STS elements (see Table 27). These tasks deal with operationally checking antiskid, brake, and air refueling signal systems; bleeding hydraulic systems; and completing workorder closeouts.

The STS will be slightly affected by the restructure of the Aero Repair A-shred. The only major change which training personnel might consider is in paragraph 9, line items 9e(5) and 9e(7), which deals with removing and installing major aircraft structural components. These line items have the highest concentration of Aero Repair tasks in the STS.

TABLE 26

EXAMPLES OF STS ITEMS NOT SUPPORTED BY OSR DATA

STS REFERENCE/TASKS	3LVL COURSE PROF CODE	TNG EMP	PERCENT MEMBERS PERFORMING 1ST ENL (N=627)	5-SKILL LEVEL (N=712)	7-SKILL LEVEL (N=305)	TSK DIF
9b(2)(a). Common aircraft hardware	2b					
J506 Autofretteage or stress relieve titanium tube assemblies		.56	2	2	1	5.66
9b(3). Fluids	2b					
E209 Maintain HAZCOM products		1.27	3	5	15	4.56
9b(4). Lubricants	1b					
E209 Maintain HAZCOM products		1.27	3	5	15	4.56
9b(5). Cleaning agents	1b					
E209 Maintain HAZCOM products		1.27	3	5	15	4.56
9b(6). Sealants	-					
E209 Maintain HAZCOM products		1.27	3	5	15	4.56
20c(2). Inspect	-					
K577 Clean, inspect, or lubricate hydraulic jacks		2.28	10	8	6	2.98

TD MEAN = 5.00 S.D. = 1.00
TE MEAN = 1.85 S.D. = 1.30 (HIGH = 3.15)

TABLE 27

EXAMPLES OF TECHNICAL TASKS WITH HIGH TD PERFORMED BY 20 PERCENT OR MORE AFSC 454X4 GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS		PERCENT MEMBERS PERFORMING 1ST JOB (N=295)	1ST ENL (N=627)	DAFSC 45454 (N=712)	DAFSC 45474 (N=305)	TNG EMP	TSK DIF
I478	Operationally check antiskid systems	27	34	39	32	4.33	4.79
0749	Operationally check air refueling signal systems	26	30	27	23	4.00	4.54
F288	Operationally check pneudraulic cargo door systems	31	35	38	27	4.09	4.37
I484	Operationally check wheel brake systems	53	60	68	52	5.52	4.34
F291	Operationally check rotor brake systems	27	37	43	30	4.73	4.30
F244	Bleed hydraulic systems or components	78	78	79	59	6.94	4.39
M647	Complete workorder closeouts	14	13	30	39	3.91	3.36

TE MEAN = 2.15 S.D. = 1.54 (High = 3.69)
TD MEAN = 5.00 S.D. = 1.00

Plan of Instruction (POI)

Job inventory tasks were matched to related learning objectives in POI C3ABR45434-000, dated 6 March 1992, with assistance from technical school subject-matter experts. The method employed was similar to that of the STS analysis. The data examined included percent members performing data for first-enlistment (1-48 months TAFMS) personnel, and TE and TD ratings. ATI ratings for each task were also used.

POI blocks, units of instruction, and learning objectives were compared to the standards set forth in Attachment 1, ATCR 52-22, dated 17 February 1989 (30 percent or more of the criterion first-job or first-enlistment group members performing tasks, along with sufficiently high TE and TD ratings on those tasks). By this guidance, learning objectives in the course which do not meet these criteria should be considered for elimination from the formal course, if not justified on some other acceptable basis.

Review of the tasks matched to the POI reveals that of the 53 matched learning objectives, 6 were not supported by OSR data. Four of the six unsupported learning objectives are contained in block 7-Hydraulic Test Stand, which is concentrated on nonportable hydraulic test stands. One unsupported learning objective was found in block 5-Pneudraulic Maintenance Fundamentals, which is focused on corrosion control. The last unsupported learning objective was found in block 9-Hose Fabrication. A sample of these objectives is in Table 28, along with the accompanying job inventory task and survey data.

Many technical tasks performed by over 30 percent of first-enlistment personnel were not matched to the POI. These tasks included bleeding, inspecting, adjusting, removing, and installing hydraulic systems or components; general maintenance of break systems and shock struts; and operationally checking spoiler systems. A more complete list of these tasks, with survey data, is listed in Table 29. In addition to many members performing these functions, several of these tasks are rated high in TE and TD. Training personnel and SMEs should review these and other unreferenced tasks to determine if training should be provided in the formal course.

The current POI will not be affected by the restructuring of the Aero Repair A-shred personnel into the Crew Chief (AFSC 457XX) career ladder. The Aero Repair function has relied on OJT to upgrade AFSC 454X4 personnel into the position and, therefore, will not affect the current entry-level course.

JOB SATISFACTION ANALYSIS

An examination of job satisfaction indicators can give career ladder managers a better understanding of factors that may affect the job performance of career ladder airmen. Therefore, the survey booklet included questions about job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions. The responses of the current survey sample were then analyzed by making several comparisons: (1)

TABLE 28

EXAMPLES OF POI OBJECTIVES NOT SUPPORTED BY OSR DATA

POI OBJECTIVES/TASKS	TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB (N=295)	PERCENT MEMBERS PERFORMING 1ST ENL (N=627)	ATI	TSK DIF**
I 5a. Without reference, identify basic facts relating to effective corrosion control. A minimum of four out of five must be correct.					
J566 Identify types of corrosion	2.95	19	19	7	4.29
III 7a. Without reference, relate the name of the major components of the non-portable hydraulic test stand to their purpose in operation of the test stand. A minimum of 8 out of 10 must be correct.					
K584 Perform operational checks of hydraulic test equipment	2.11	22	25	7	4.18
III 7b. Without reference, relate the circuits of the non-portable hydraulic test stand to their function in operation of the test stand and the components being tested. A minimum of 8 out of 10 must be correct.					
K584 Perform operational checks of hydraulic test equipment	2.11	22	25	7	4.18

TE MEAN = 1.85 S.D. = 1.30 (High = 3.15)
TD MEAN = 5.00 S.D. = 1.00

TABLE 28 (CONTINUED)

EXAMPLES OF POI OBJECTIVES NOT SUPPORTED BY OSR DATA

POI OBJECTIVES/TASKS	TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB (N=295)	1ST ENL (N=627)	ATI	TSK DIF**
III 9h. Using applicable technical materials, proper tools and the hose testing unit, test a teflon hose assembly with no more than one procedural error.					
J567 Perform hydrastatic tests on hose or tube assemblies	2.53	23	29	7	3.97

TE MEAN = 1.85 S.D. = 1.30 (High = 3.15)
TD MEAN = 5.00 S.D. = 1.00

TABLE 29

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE
AFSC 454X4 GROUP MEMBERS AND NOT REFERENCED TO THE POI

TASKS		TNG EMP	1ST JOB (N=295)	1ST ENL (N=627)	ATI	TSK DIF
F244	Bleed hydraulic systems or components	4.11	78	78	18	4.38
F250	Inspect auxiliary hydraulic systems	3.15	51	55	18	4.69
F315	Remove or install pneudraulic hose assemblies	3.30	58	63	18	3.35
F319	Service aircraft accumulators	3.59	54	59	18	3.23
G346	Adjust hydraulic components of pneudraulic power systems	3.39	47	51	18	5.53
G348	Inspect hydraulic pressure indicating systems	3.44	55	61	18	4.57
G355	Operationally check hydraulic pressure indicating systems	3.67	53	58	18	4.34
G361	Remove or install components of hydraulic pressure indicating systems	3.29	48	56	18	4.27
H422	Operationally check spoiler systems	5.72	50	56	18	5.08
H440	Remove or install components of spoiler systems	4.95	52	57	18	5.53
H458	Troubleshoot malfunctions within spoiler systems	5.30	41	51	18	6.52
I477	Inspect wheel brake system components	3.92	44	53	18	4.44
I484	Operationally check wheel brake systems	4.05	53	60	18	4.62
I485	Remove or install components of aircraft wheel brake systems	3.82	51	60	18	4.67
I490	Remove or install components of nose wheel steering systems	4.99	52	56	18	5.29
I491	Remove or install components of shock struts	5.08	45	52	18	5.81
F295	Remove or install components of auxiliary hydraulic systems	2.90	61	63	17	4.68
G365	Troubleshoot malfunctions within hydraulic indicating systems	3.01	45	55	17	5.57
I486	Remove or install components of antiskid systems	2.99	41	50	17	4.67
E225	Research microfiche files for supply requisition data	2.59	28	31	15	3.89
F269	Inspect rotor brake systems	2.41	28	35	15	4.48
F291	Operationally check rotor brake systems	2.63	27	37	15	4.62
F309	Remove or install components of rotor brake systems	2.15	27	36	15	4.64
F312	Remove or install hydraulic components of APU starting systems	2.00	26	30	15	4.71

TE MEAN = 1.85 S.D. = 1.30 (High = 3.15)
TD MEAN = 5.00 S.D. = 1.00

among TAFMS groups of the AFSC 454X4A career ladder and a comparative sample of personnel from other Mission Equipment Maintenance career fields; (2) between current and previous survey TAFMS groups; and (3) across those clusters and jobs identified in the SPECIALTY JOBS section of this report.

Tables 30 and 31 compare first-enlistment (1-48 months TAFMS), second-enlistment (49-96 months TAFMS), and career (97+ months TAFMS) group data to corresponding enlistment groups from other Mission Equipment Maintenance AFSCs surveyed during the previous calendar year. These data give a relative measure of how the job satisfaction of AFSC 454X4A personnel compares with similar Air Force specialties. Aircraft Pneudraulic Systems personnel (Table 30) reported generally higher job satisfaction than members of the comparative sample. However, the career group rated their perceived use of talent lower than that of the comparative sample career group. Overall, satisfaction for all three TAFMS groups is still relatively high. Aero Repair personnel (Table 31) also showed a higher job satisfaction then members of the comparative sample. Fewer second-term personnel felt their training and talent were well used. Satisfaction ratings by Aero Repair were similar to Pneudraulics Repair and show a relatively high satisfaction rating. The percentages of positive responses in these comparisons reflect a career ladder where personnel appear to be quite satisfied with their jobs.

An indication of changes in job satisfaction perceptions within the career ladder is provided in Tables 32 and 33, which present TAFMS group data for 1992 survey respondents and data from respondents to the last OSR of the career ladder in 1984 (AFSC 423X4). Generally, perceptions of job satisfaction have remained constant for all TAFMS groups when compared to the AFSC 423X4 sample. Second-enlistment personnel decrease in perceived use of training, while career group personnel show a marked increase for plans of retirement. Overall, job satisfaction has remained stable since Rivet Workforce changes to the 454X4/A career ladder.

Table 34 presents job satisfaction data for the major jobs identified in the career ladder structure for AFSC 454X4A. An examination of these data may reveal indications of concern to functional managers. Job satisfaction indicators for the specialty job groups suggest that members of the Field Training Detachment job and Air Refueling Quality Assurance groups are most satisfied. Only 4 of the 13 specialty job groups indicated a low degree of satisfaction. These groups include B-1B Flightline Repair, CUT personnel, CAMS personnel, and the least satisfied group, Supply. These four groups constitute less than 4 percent of the total survey sample, and personnel performing the CAMS, CUT, and supply jobs are essentially working out of the specialty, doing support jobs.

TABLE 30

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 454X4
TAFMS GROUPS IN CURRENT SURVEY TO A COMPARATIVE SAMPLE
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	454X4 (N=627)	COMP SAMPLE (N=3,272)	454X4 (N=280)	COMP SAMPLE (N=2,917)	454X4 (N=574)	COMP SAMPLE (N=6,421)
EXPRESSED JOB INTEREST						
INTERESTING	82	74	77	72	83	75
SO-SO	12	16	16	17	11	16
DULL	6	10	6	11	6	9
PERCEIVED USE OF TALENTS						
EXCELLENT TO PERFECT	15	17	18	21	22	24
FAIRLY WELL TO PERFECT	74	58	65	50	66	51
NONE TO VERY LITTLE	11	20	17	20	11	18
PERCEIVED USE OF TRAINING						
EXCELLENT TO PERFECT	21	17	20	15	24	16
FAIRLY WELL TO PERFECT	72	68	65	66	61	63
NONE TO VERY LITTLE	6	14	15	19	14	21
SENSE OF ACCOMPLISHMENT FROM JOB						
SATISFIED	83	73	79	71	81	72
NEUTRAL	10	12	10	12	7	10
DISSATISFIED	7	14	11	17	11	17
REENLISTMENT INTENTIONS						
YES OR PROBABLY YES	65	59	75	70	70	75
NO OR PROBABLY NO	35	41	24	30	11	7
WILL RETIRE	0	*	*	*	18	18

* Denotes less than 1 percent

Comparative data are from AFSCs 305X4, 404X0, 411X0A, 452X5, 454X5, 454X6, 457X0A/B/D/F, 457X2A/D/E, and 463X0surveyed in 1992

TABLE 31

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 454X4A TAFMS GROUPS IN CURRENT SURVEY TO A COMPARATIVE SAMPLE (PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	454X4A (N=140)	COMP SAMPLE (N=3,272)	454X4A (N=169)	COMP SAMPLE (N=2,917)	454X4A (N=308)	COMP SAMPLE (N=6,421)
EXPRESSED JOB INTEREST						
INTERESTING	82	74	80	72	82	75
SO-SO	11	16	13	17	12	16
DULL	7	10	7	11	6	9
PERCEIVED USE OF TALENTS						
EXCELLENT TO PERFECT	8	17	18	21	26	24
FAIRLY WELL TO PERFECT	80	58	68	50	60	51
NONE TO VERY LITTLE	11	20	13	20	14	18
PERCEIVED USE OF TRAINING						
EXCELLENT TO PERFECT	13	17	13	15	21	16
FAIRLY WELL TO PERFECT	74	68	73	66	65	63
NONE TO VERY LITTLE	13	14	13	19	14	21
SENSE OF ACCOMPLISHMENT FROM JOB						
SATISFIED	80	73	81	71	79	72
NEUTRAL	11	12	9	12	12	10
DISSATISFIED	8	14	10	17	9	17
REENLISTMENT INTENTIONS						
YES OR PROBABLY YES	61	58	76	70	78	75
NO OR PROBABLY NO	39	41	23	30	12	7
WILL RETIRE	0	*	1	*	10	18

* Denotes less than 1 percent

Comparative data are from AFSCs 305X4, 404X0, 411X0A, 452X5, 454X5, 454X6, 457X0A/B/D/F, 457X2A/D/E, and 463X0 surveyed in 1992

TABLE 32

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 454X4
TAFMS GROUPS IN CURRENT SURVEY TO 1984 423X4 SURVEY
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1992	1984	1992	1984	1992	1984
EXPRESSED JOB INTEREST						
INTERESTING	82	80	77	78	83	78
SO-SO	12	12	16	15	11	16
DULL	6	6	6	6	6	6
PERCEIVED USE OF TALENTS						
EXCELLENT TO PERFECT	15	#	18	#	22	#
FAIRLY WELL TO PERFECT	74	88	65	84	66	83
NONE TO VERY LITTLE	11	11	17	15	11	15
PERCEIVED USE OF TRAINING						
EXCELLENT TO PERFECT	21	#	20	#	24	#
FAIRLY WELL TO PERFECT	72	90	65	88	61	83
NONE TO VERY LITTLE	6	9	15	12	14	15
REENLISTMENT INTENTIONS						
YES OR PROBABLY YES	65	62	75	79	70	89
NO OR PROBABLY NO	35	36	24	19	11	9
WILL RETIRE	0	2	0	1	18	1

Choice not offered in previous study

TABLE 33

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 454X4/A
TAFMS GROUPS IN CURRENT SURVEY TO 1984 423X4 SURVEY
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1992	1984	1992	1984	1992	1984
EXPRESSED JOB INTEREST						
INTERESTING	82	80	80	78	82	78
SO-SO	11	12	13	15	12	16
DULL	7	6	7	6	6	6
PERCEIVED USE OF TALENTS						
EXCELLENT TO PERFECT	8	#	18	#	26	#
FAIRLY WELL TO PERFECT	80	88	68	84	60	83
NONE TO VERY LITTLE	11	11	13	15	14	15
PERCEIVED USE OF TRAINING						
EXCELLENT TO PERFECT	13	#	13	#	21	#
FAIRLY WELL TO PERFECT	74	90	73	88	65	83
NONE TO VERY LITTLE	13	9	13	12	14	15
REENLISTMENT INTENTIONS						
YES OR PROBABLY YES	61	62	75	79	78	89
NO OR PROBABLY NO	39	36	24	19	12	9
WILL RETIRE	0	2	1	1	10	1

Choice not reported in previous study

TABLE 34

JOB SATISFACTION INDICATORS FOR AFSC 454X4/A JOBS
(PERCENT MEMBERS RESPONDING)

	PNEUDRAULICS REPAIR CLUSTER (N=951)	B-1B FLIGHTLINE REPAIR JOB (N=12)	C-141 IN-SHOP PNEUDRAULICS JOB (N=17)	AIR REFUELING SYS MAINT JOB (N=11)
EXPRESSED JOB INTEREST				
INTERESTING	84	75	76	82
SO-SO	11	8	12	9
DULL	4	17	12	9
PERCEIVED USE OF TALENTS				
EXCELLENT TO PERFECT	21	8	6	9
FAIRLY WELL TO PERFECT	68	75	76	73
NONE TO VERY LITTLE	11	17	18	18
PERCEIVED USE OF TRAINING				
EXCELLENT TO PERFECT	23	17	6	9
FAIRLY WELL TO PERFECT	67	58	86	73
NONE TO VERY LITTLE	9	25	6	18
SENSE OF ACCOMPLISHMENT FROM JOB				
SATISFIED	85	83	59	64
NEUTRAL	7	8	29	27
DISSATISFIED	8	8	12	9
REENLISTMENT INTENTIONS				
YES OR PROBABLY YES	70	67	53	27
NO OR PROBABLY NO	24	33	47	64
WILL RETIRE	6	0	0	0

TABLE 34 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 454X4/A JOBS
(PERCENT MEMBERS RESPONDING)

	CROSS-UTILIZATION TRAINING JOB (N=23)	FIELD TRAINING DET JOB (N=12)	IN-SHOP PNEUDRAULICS REPAIR CLUSTER (N=182)	SUPPLY JOB (N=15)	CORE AUTOMATED MAINT SYS JOB (N=20)
EXPRESSED JOB INTEREST					
INTERESTING	87	100	80	33	70
SO-SO	9	0	14	40	25
DULL	4	0	7	27	5
PERCEIVED USE OF TALENTS					
EXCELLENT TO PERFECT	9	58	14	7	5
FAIRLY WELL TO PERFECT	65	42	73	47	85
NONE TO VERY LITTLE	26	0	13	47	10
PERCEIVED USE OF TRAINING					
EXCELLENT TO PERFECT	9	83	22	0	10
FAIRLY WELL TO PERFECT	61	17	72	60	70
NONE TO VERY LITTLE	30	0	5	40	20
SENSE OF ACCOMPLISHMENT FR[illegible]OB					
SATISFIED	74	100	82	53	65
NEUTRAL	0	0	10	33	10
DISSATISFIED	26	0	7	13	25
REENLISTMENT INTENTIONS					
YES OR PROBABLY YES	87	67	69	47	75
NO OR PROBABLY NO	9	25	30	27	20
WILL RETIRE	4	8	1	27	5

TABLE 34 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 454X4/A JOBS
(PERCENT MEMBERS RESPONDING)

	AIR REFUELING INSTRUCTOR JOB (N=12)	MANAGEMENT CLUSTER (N=47)	IN-SHOP PNEUDRAULICS CHIEF CLUSTER (N=95)	AERO REPAIR CLUSTER (N=387)
EXPRESSED JOB INTEREST				
INTERESTING	100	85	84	80
SO-SO	0	13	9	13
DULL	0	2	6	7
PERCEIVED USE OF TALENTS				
EXCELLENT TO PERFECT	17	23	19	22
FAIRLY WELL TO PERFECT	83	66	69	66
NONE TO VERY LITTLE	0	11	12	11
PERCEIVED USE OF TRAINING				
EXCELLENT TO PERFECT	25	21	20	20
FAIRLY WELL TO PERFECT	75	64	63	68
NONE TO VERY LITTLE	0	13	17	11
SENSE OF ACCOMPLISHMENT FROM JOB				
SATISFIED	92	83	77	80
NEUTRAL	8	11	7	11
DISSATISFIED	0	4	16	9
REENLISTMENT INTENTIONS				
YES OR PROBABLY YES	92	62	76	76
NO OR PROBABLY NO	0	2	6	20
WILL RETIRE	8	36	17	4

IMPLICATIONS

As explained in the INTRODUCTION, this survey was conducted primarily to provide training personnel with current information on the Aircraft Pneudraulic Systems career ladder for use in reviewing current training programs and training documents. The data compiled from this survey support the current structure of the AFSC 454X4/A career ladder. The present classification structure, as described by the AFR 39-1 Specialty Descriptions, accurately portrays the jobs in this study.

Since the January 1993 Aero Repair Restructure Workshop mandated realignment of Aero Repair, the Pneudraulics career ladder will soon appear to look more like the pre-Rivet Workforce ladder. Some of the current jobs will decline in numbers, but will essentially remain the same. The only job that will be eliminated is the Aero Repair function. The current AFR 39-1 will not undergo much revision due to the fact that Aero Repair is not addressed in the specialty descriptions. Training documents will have minor changes to accommodate the loss of the Aero Repair function.

Analysis of career ladder documents indicates both the STS and POI contain a few unsupported line items and learning objectives. The unsupported areas in both documents are not directly related, but should be reviewed to determine if their inclusion in future revisions of these documents is warranted.

No serious job satisfaction problems appear to exist within this specialty. Overall, job satisfaction responses were almost all higher than those of a comparative sample of similar Air Force personnel surveyed in 1991.

APPENDIX A

REPRESENTATIVE TASKS PERFORMBED BY MEMBERS OF CAREER LADDER JOBS

TABLE A1

PNEUDRAULICS REPAIR CLUSTER
(STG114)

NUMBER OF PEOPLE IN GROUP: 951
PERCENTAGE OF TOTAL SAMPLE: 47%

TAFMS: 86 MONTHS
TICF: 78 MONTHS

TASKS		PERCENT PERFORMING
F244	Bleed hydraulic systems or components	93
G354	Operationally check hydraulic power systems	93
G360	Remove or install components of hydraulic power systems	92
I484	Operationally check wheel brake systems	91
I485	Remove or install components of aircraft wheel brake systems	91
I488	Remove or install components of landing gear retraction or extension systems	90
G347	Inspect hydraulic power systems	90
I468	Bleed or service wheel brake systems	90
I505	Troubleshoot malfunctions within wheel brake systems	88
F315	Remove or install pneudraulic hose assemblies	86
F321	Service aircraft hydraulic systems	86
G366	Troubleshoot malfunctions within hydraulic power systems	86
G348	Inspect hydraulic pressure indicating systems	85
H436	Remove or install components of rudder systems	85
G355	Operationally check hydraulic pressure indicating systems	84
I477	Inspect wheel brake system components	84
H418	Operationally check rudder systems	84
I482	Operationally check landing gear normal extension and retraction systems	84
F319	Service aircraft accumulators	83
G365	Troubleshoot malfunctions within hydraulic indicating systems	83
H454	Troubleshoot malfunctions within rudder systems	83
G361	Remove or install components of hydraulic pressure indicating systems	83
I476	Inspect shock struts	82
I490	Remove or install components of nose wheel steering systems	82
F316	Remove or install tube assemblies	81
I474	Inspect nose wheel steering system components	81
F295	Remove or install components of auxiliary hydraulic systems	80
I471	Inspect landing gear extension or retraction components	80
I504	Troubleshoot malfunctions within nose wheel steering systems	80
I483	Operationally check nose wheel steering systems	80
F272	Operationally check auxiliary hydraulic systems	79
G352	Operationally check emergency hydraulic systems	79
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	77

TABLE A2

B-1B FLIGHTLINE REPAIR JOB
(STG210)

NUMBER OF PEOPLE IN GROUP: 12 TAFMS: 59 MONTHS
PERCENTAGE OF TOTAL SAMPLE: LESS THAN 1% TICF: 48 MONTHS

TASKS		PERCENT PERFORMING
H438	Remove or install components of SMCSs	100
M639	Access CAMS menus and data screens	100
G354	Operationally check hydraulic power systems	100
M644	Change CAMS workcenter event narratives	100
H456	Troubleshoot malfunctions within SMCSs	92
F248	Dump pressurized hydraulic systems	92
M656	Open or close CAMS	92
M650	Defer maintenance discrepancies in CAMS	92
F305	Remove or install components of overwing fairing systems	92
F316	Remove or install tube assemblies	92
F286	Operationally check overwing fairing systems	92
M646	Clear or close out completed aircraft maintenance discrepancies in CAMS	83
H375	Adjust components of structural mode control systems (SMCSs)	83
F312	Remove or install hydraulic components of APU starting systems	83
M657	Perform CAMS inquiries for scheduled aircraft discrepancies	83
G366	Troubleshoot malfunctions within hydraulic power systems	83
G360	Remove or install components of hydraulic power systems	83
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	83
N704	Remove or install MLG components	83
0759	Remove or install components of air refueling receiver systems	83
M649	Create aircraft or support equipment maintenance discrepancies in CAMS	83
I488	Remove or install components of landing gear retraction or extension systems	83
E198	Initiate, annotate, or complete AFTO Forms 349 (Maintenance Data Collection Record)	83
M640	Analyze CAMS data	75
H403	Inspect SMCS components	75
E200	Inventory consolidated tool kits (CTKs)	75
M663	Schedule or reschedule aircraft maintenance discrepancies in CAMS	75
M653	Input serially controlled item data	75
0748	Operationally check air refueling receiver systems	75
M643	Change CAMS work unit codes	75
F300	Remove or install components of hydraulic alternator/ generator systems	75
F323	Troubleshoot malfunctions within APU starting systems	75

TABLE A3

C-141 IN-SHOP PNEUDRALICS JOB
(STG161)

NUMBER OF PEOPLE IN GROUP: 17 TAFMS: 33 MONTHS
PERCENTAGE OF TOTAL SAMPLE: 1% TICF: 25 MONTHS

TASKS		PERCENT PERFORMING
J564	Fabricate rubber hose assemblies	94
J543	Bench check or repair hydraulic swivel assemblies	94
J518	Bench check or repair brake assemblies	88
F321	Service aircraft hydraulic systems	88
K576	Clean, inspect, or lubricate hose fabrication equipment	88
J565	Fabricate teflon hose assemblies	82
E200	Inventory consolidated tool kits (CTKs)	82
E201	Inventory equipment, tools, or supplies	82
K575	Clean tools	82
F244	Bleed hydraulic systems or components	82
J535	Bench check or repair hydraulic actuating cylinders	82
G360	Remove or install components of hydraulic power systems	82
K579	Clean, inspect, or lubricate shop hydraulic test equipment	82
J542	Bench check or repair hydraulic selector valves	82
F246	Drain nonpressurized hydraulic systems	82
F315	Remove or install pneudraulic hose assemblies	76
J514	Bench check or repair accumulators	76
F296	Remove or install components of cargo door or ramp systems	76
F295	Remove or install components of auxiliary hydraulic systems	76
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	76
I474	Inspect nose wheel steering system components	76
H391	Inspect elevator hydraulic systems	76
G347	Inspect hydraulic power systems	76
J567	Perform hydrostatic tests on hose or tube assemblies	76
F258	Inspect hydraulic cargo door systems	76
G352	Operationally check emergency hydraulic systems	76
K589	Remove or replace components of hose fabrication equipment	76
F319	Service aircraft accumulators	71
I476	Inspect shock struts	71
H412	Operationally check elevator systems	71
I488	Remove or install components of landing gear retraction or extension systems	71
H427	Remove or install components of aileron systems	71

TABLE A4

AIR REFUELING SYSTEMS MAINTENANCE JOB
(STG152)

NUMBER OF PEOPLE IN GROUP: 11
PERCENTAGE OF TOTAL SAMPLE: 1%

TAFMS: 86 MONTHS
TICF: 83 MONTHS

TASKS		PERCENT PERFORMING
0735	Inspect air refueling boom signal systems	100
0746	Operationally check air refueling boom systems	100
0733	Inspect air refueling boom hydraulic systems	100
0728	Inspect air refueling boom assemblies	100
0729	Inspect air refueling boom control systems	100
0749	Operationally check air refueling signal systems	100
0767	Troubleshoot malfunctions within air refueling systems	100
0757	Remove or install components of air refueling boom systems	100
0720	Adjust air refueling boom system components	91
0734	Inspect air refueling boom indicating systems	91
0722	Adjust air refueling indicating system components	91
0737	Inspect air refueling drogue systems	91
0731	Inspect air refueling boom fuel systems, other than in-progress inspections	91
0730	Inspect air refueling boom electrical systems	91
0750	Operationally check boom air refueling fuel systems	82
0741	Inspect air refueling receiver signal systems	82
0721	Adjust air refueling drogue system components	82
0747	Operationally check air refueling drogue systems	82
0765	Troubleshoot malfunctions within air refueling drogue systems	82
0736	Inspect air refueling boom stowage latch control systems	82
F295	Remove or install components of auxiliary hydraulic systems	82
0740	Inspect air refueling receiver hydraulic systems	82
0732	Inspect air refueling boom hoist systems	82
0758	Remove or install components of air refueling drogue systems	82
F244	Bleed hydraulic systems or components	82
0763	Rig components of air refueling boom stowage latch control systems	82
0759	Remove or install components of air refueling receiver systems	82
M639	Access CAMS menus and data screens	73
0766	Troubleshoot malfunctions within air refueling receiver systems	73
0726	Adjust IFR pod hydraulic systems	73
G354	Operationally check hydraulic power systems	73
G366	Troubleshoot malfunctions within hydraulic power systems	73

TABLE A5

CROSS-UTILIZATION TRAINING (CUT) JOB
(STG260)

NUMBER OF PEOPLE IN GROUP: 23 TAFMS: 66 MONTHS
PERCENTAG OF TOTAL SAMPLE: 1% TICF: 63 MONTHS

TASKS		PERCENT PERFORMING
L637	Walk wings or tails during aircraft towing operations	100
L607	Perform single-point aircraft refueling or defueling	96
L609	Position nonpowered or powered AGE to aircraft	96
L596	Check or service engine oil	96
F321	Service aircraft hydraulic systems	96
H422	Operationally check spoiler systems	91
L600	Launch or recover aircraft	87
L598	Ground aircraft	87
L634	Tow aircraft	87
H408	Operationally check aileron systems	87
L610	Position or remove aircraft chocks or ground safety pins	83
L599	Jack or level aircraft	83
F244	Bleed hydraulic systems or components	83
F258	Inspect hydraulic cargo door systems	78
F319	Service aircraft accumulators	78
H418	Operationally check rudder systems	78
I496	Service aircraft shock struts	78
I485	Remove or install components of aircraft wheel brake systems	78
L633	Service aircraft tires	74
H412	Operationally check elevator systems	74
L608	Perform thru flight or postflight inspections	70
E156	Annotate or complete AF Forms 979 (DANGER TAG)	70
G355	Operationally check hydraulic pressure indicating systems	70
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	70
F296	Remove or install components of cargo door or ramp systems	70
H423	Operationally check wing flap systems	70
I468	Bleed or service wheel brake systems	70
G354	Operationally check hydraulic power systems	65
G347	Inspect hydraulic power systems	65
G360	Remove or install components of hydraulic power systems	65
F316	Remove or install tube assemblies	65
E151	Annotate AFTO Forms 781 Series (AFORM Aircrew/Mission Flight Data Document)	61

TABLE A6

FIELD TRAINING DETACHMENT JOB
(STG107)

NUMBER OF PEOPLE IN GROUP: 12
PERCENTAGE OF TOTAL SAMPLE: 1%

TAFMS: 137 MONTHS
TICF: 111 MONTHS

TASKS		PERCENT PERFORMING
H423	Operationally check wing flap systems	100
H408	Operationally check aileron systems	100
H418	Operationally check rudder systems	92
H412	Operationally check elevator systems	92
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	92
D142	Prepare lesson plans	92
I504	Troubleshoot malfunctions within nose wheel steering systems	92
D148	Score tests	83
H415	Operationally check pitch trim systems	83
D131	Evaluate training materials or aids	83
D139	Prepare changes to course summary documents or course objective documents	83
D130	Evaluate student questionnaires or critiques	83
D113	Conduct field training detachment (FTD) training	75
H454	Troubleshoot malfunctions within rudder systems	75
H447	Troubleshoot malfunctions within elevator systems	75
H459	Troubleshoot malfunctions within wing flap systems	75
D136	Inspect training aids for operation or suitability	75
D108	Administer tests	75
G365	Troubleshoot malfunctions within hydraulic indicating systems	75
D107	Administer student critiques	75
E200	Inventory consolidated tool kits (CTKs)	75
I482	Operationally check landing gear normal extension and retraction systems	67
H422	Operationally check spoiler systems	67
H444	Troubleshoot malfunctions within aileron systems	67
G366	Troubleshoot malfunctions within hydraulic power systems	67
D140	Prepare instruction training areas or facilities	67
I483	Operationally check nose wheel steering systems	67
D150	Write test questions	67
D133	Evaluate training progress of resident course or FTD students	58
E219	Maintain TO files	58
H458	Troubleshoot malfunctions within spoiler systems	58
I505	Troubleshoot malfunctions within wheel brake systems	58

TABLE A7

IN-SHOP PNEUDRAULICS REPAIR CLUSTER
(STG120)

NUMBER OF PEOPLE IN GROUP: 182 TAFMS: 53 MONTHS
PERCENTAGE OF TOTAL SAMPLE: 9% TICF: 50 MONTHS

TASKS		PERCENT PERFORMING
J565	Fabricate teflon hose assemblies	96
J564	Fabricate rubber hose assemblies	95
J514	Bench check or repair accumulators	93
K575	Clean tools	93
J518	Bench check or repair brake assemblies	91
J535	Bench check or repair hydraulic actuating cylinders	89
K576	Clean, inspect, or lubricate hose fabrication equipment	85
M656	Open or close CAMS	84
M639	Access CAMS menus and data screens	84
E200	Inventory consolidated tool kits (CTKs)	82
K579	Clean, inspect, or lubricate shop hydraulic test equipment	82
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	75
J510	Bench check components of rotor brake systems	75
J543	Bench check or repair hydraulic swivel assemblies	75
K587	Perform operator maintenance on hydraulic test stands	74
K584	Perform operational checks of hydraulic test equipment	71
K595	Troubleshoot malfunctions within shop hydraulic test stands	71
K591	Remove or replace components of shop hydraulic test stands or equipment	71
K574	Clean or lubricate hydraulic components of test stands	70
E201	Inventory equipment, tools, or supplies	68
E207	Maintain Ks	68
J567	Perform hydrostatic tests on hose or tube assemblies	67
J569	Prepare pneudraulic components for storage or shipment	65
M646	Clear or close out completed aircraft maintenance discrepancies in CAMS	64
E169	Complete AF Forms 2005 (Issue/Turn-in Request)	63
J517	Bench check or repair aircraft reservoirs	59
E160	Attach or annotate equipment status labels or tags, such as DD Forms 1574 (Serviceable Tag - Materiel)	59
J560	Bench check or repair shock struts	59
K589	Remove or replace components of hose fabrication equipment	59
M650	Defer maintenance discrepancies in CAMS	57
J538	Bench check or repair hydraulic filter assemblies	57

TABLE A8

SUPPLY JOB
(STG201)

NUMBER OF PEOPLE IN GROUP: 15 TAFMS: 140 MONTHS
PERCENTAGE OF TOTAL SAMPLE: 1% TICF: 93 MONTHS

TASKS		PERCENT PERFORMING
E200	Inventory consolidated tool kits (CTKs)	100
E201	Inventory equipment, tools, or supplies	100
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	100
E154	Annotate DD Forms 1348-1 (DOD Single Line Item Release/ Receipt Document)	100
E202	Issue supplies and equipment	93
E207	Maintain CTKs	93
E160	Attach or annotate equipment status labels or tags, such as DD Forms 1574 (Serviceable Tag - Materiel)	93
E165	Complete AF Forms 1297 (Temporary Issue Receipt)	93
E195	Evaluate serviceability of supplies or equipment	93
E203	Log turn-in of supplies and equipment	87
E169	Complete AF Forms 2005 (Issue/Turn-in Request)	87
C 67	Conduct inspections of organizational equipment	80
E205	Maintain benchstock parts or equipment levels	80
E171	Complete AF Forms 2413 (Supply Control Log)	80
K581	Issue or receive tools	73
A6	Determine work priorities	73
E182	Complete AFTO Forms 244 (Industrial/Support Equipment Record)	73
C99	Review equipment forms	73
K575	Clean tools	73
M639	Access CAMS menus and data screens	67
E189	Coordinate with base supply on obtaining parts	67
E226	Research TOs to identify components or items of equipment	67
C104	Write EPRs	67
C98	Perform safety inspections of equipment or facilities	60
E198	Initiate, annotate, or complete AFTO Forms 349 (Maintenance Data Collection Record)	60
E225	Research microfiche files for supply requisition data	60
E212	Maintain or paint facilities or equipment	60
C65	Certify status of reparable, serviceable, or condemned parts	60
E185	Complete DD Forms 1348-6 (DOD Single Line Item Requisition System Document)	60
E183	Complete AFTO Forms 245 (Industrial/Support Equipment Record (Continuous Sheet))	60
C96	Inspect personnel for compliance with military standards	60
M656	Open or close CAMS	53

TABLE A9

CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) JOB
(STG186)

NUMBER OF PEOPLE IN GROUP: 20 TAFMS: 146 MONTHS
PERCENTAGE OF TOTAL SAMPLE: 1% TICF: 127 MONTHS

TASKS		PERCENT PERFORMING
M639	Access CAMS menus and data screens	100
M656	Open or close CAMS	100
M657	Perform CAMS inquiries for scheduled aircraft discrepancies	100
M640	Analyze CAMS data	95
M641	Change CAMS errors noted during daily verification process	95
M646	Clear or close out completed aircraft maintenance discrepancies in CAMS	90
M644	Change CAMS workcenter event narratives	90
M643	Change CAMS work unit codes	90
A3	Coordinate maintenance problems with other agencies	85
M659	Perform CAMS inquiries for uncompleted maintenance event listings	85
M660	Perform CAMS inquiries to monitor delayed discrepancies	85
M662	Retrieve CAMS products	85
M663	Schedule or reschedule aircraft maintenance discrepancies in CAMS	85
M642	Change CAMS job standard narratives	85
M649	Create aircraft or support equipment maintenance discrepancies in CAMS	85
M666	Verify accuracy of daily inputs in CAMS	80
A6	Determine work priorities	80
M658	Perform CAMS inquiries for training status	75
M661	Perform CAMS interface with base supply systems	70
M645	Clean CAMS equipment	70
M650	Defer maintenance discrepancies in CAMS	70
M647	Complete workorder closeouts	70
A28	Review flight schedules	60
M648	Conduct CAMS training	60
A18	Participate in meetings, such as staff meetings, briefings, conferences, or workshops	60
C104	Write EPRs	60
A17	Establish work schedules	55
B34	Counsel personnel on personal or military matters	55
M664	Start or stop CAMS job following events	50
E189	Coordinate with base supply on obtaining parts	50
A1	Assign personnel to duty positions	50
M665	Track CAMS job following events	45

TABLE A10

AIR REFUELING INSTRUCTOR JOB
(STG230)

NUMBER OF PEOPLE IN GROUP: 12 TAFMS: 163 MONTHS
PERCENTAGE OF TOTAL SAMPLE: 1% TICF: 152 MONTHS

TASKS		PERCENT PERFORMING
C67	Conduct inspections of organizational equipment	100
0733	Inspect air refueling boom hydraulic systems	100
0728	Inspect air refueling boom assemblies	100
0731	Inspect air refueling boom fuel systems, other than in-progress inspections	100
0730	Inspect air refueling boom electrical systems	100
0729	Inspect air refueling boom control systems	100
0735	Inspect air refueling boom signal systems	100
0732	Inspect air refueling boom hoist systems	100
G350	Inspect reservoir pressurization systems	100
0734	Inspect air refueling boom indicating systems	100
C99	Review equipment forms	92
H405	Inspect spoiler systems	92
G348	Inspect hydraulic pressure indicating systems	92
H392	Inspect flap systems	92
I474	Inspect nose wheel steering system components	92
I475	Inspect nose wheel steering systems	92
0736	Inspect air refueling boom stowage latch control systems	92
H397	Inspect power rudder systems	92
A18	Participate in meetings, such as staff meetings, briefings, conferences, or workshops	92
G347	Inspect hydraulic power systems	83
I471	Inspect landing gear extension or retraction components	83
H401	Inspect rudder systems	83
C92	Evaluate technical order (TO) improvement reports	83
I476	Inspect shock struts	83
C97	Investigate accidents or incidents	83
A3	Coordinate maintenance problems with other agencies	83
F269	Inspect rotor brake systems	83
B47	Implement quality assurance programs	83
A13	Establish inspection procedures	75
0740	Inspect air refueling receiver hydraulic systems	75
F250	Inspect auxiliary hydraulic systems	75
0741	Inspect air refueling receiver signal systems	75

TABLE A11

MANAGEMENT CLUSTER
(STG072)

NUMBER OF PEOPLE IN GROUP: 47
PERCENTAGE OF TOTAL SAMPLE: 2%

TAFMS: 196 MONTHS
TICF: 167 MONTHS

TASKS		PERCENT PERFORMING
A18	Participate in meetings, such as staff meetings, briefings, conferences, or workshops	91
C104	Write EPRs	83
C96	Inspect personnel for compliance with military standards	81
B29	Schedule leaves, passes, or temporary duty (TDY)	81
B34	Counsel personnel on personal or military matters	81
A3	Coordinate maintenance problems with other agencies	79
A6	Determine work priorities	77
A4	Determine personnel requirements	77
C105	Write recommendations for awards or decorations	77
B62	Supervise personnel with AFSCs other than 454X4	74
A17	Establish work schedules	74
A15	Establish performance standards for subordinates	74
C68	Conduct performance feedback worksheet (PFW) sessions	74
C95	Indorse enlisted performance reports (EPRs)	70
A5	Determine requirements for space, equipment, or supplies	68
C64	Analyze workload requirements	66
C66	Clear RED X conditions	64
B53	Orient newly assigned personnel	62
A11	Develop work methods or procedures	60
A1	Assign personnel to duty positions	60
C102	Serve on airman recognition boards	60
A2	Assign sponsors for newly assigned personnel	60
B51	Interpret policies, directives, or procedures for subordinates	57
C93	Evaluate work schedules	57
C78	Evaluate individuals for promotion, demotion, or reclassification	57
A10	Develop self-inspection programs	57
B32	Conduct briefings	55
B63	Write correspondence	53
B30	Adjust daily maintenance plans to meet operational commitments	53
C100	Review maintenance data collection forms	51
E151	Annotate AFTO Forms 781 Series (AFORM Aircrew/Mission Flight Data Document)	51
A27	Review drafts of regulations, manuals, or other directives	49

TABLE A12

IN-SHOP PNEUDRAULICS CHIEF CLUSTER
(STG184)

NUMBER OF PEOPLE IN GROUP: 95 TAFMS: 160 MONTHS
PERCENT OF TOTAL SAMPLE: 5% TICF: 147 MONTHS

TASKS		PERCENT PERFORMING
A6	Determine work priorities	96
C65	Certify status of reparable, serviceable, or condemned parts	94
E201	Inventory equipment, tools, or supplies	94
E169	Complete AF Forms 2005 (Issue/Turn-in Request)	94
C104	Write EPRs	93
A3	Coordinate maintenance problems with other agencies	93
E189	Coordinate with base supply on obtaining parts	92
C68	Conduct performance feedback worksheet (PFW) sessions	92
E200	Inventory consolidated tool kits (CTKs)	91
E165	Complete AF Forms 1297 (Temporary Issue Receipt)	91
B34	Counsel personnel on personal or military matters	91
C99	Review equipment forms	89
E171	Complete AF Forms 2413 (Supply Control Log)	89
A18	Participate in meetings, such as staff meetings, briefings, conferences, or workshops	89
M639	Access CAMS menus and data screens	88
C96	Inspect personnel for compliance with military standards	88
E182	Complete AFTO Forms 244 (Industrial/Support Equipment Record)	88
E160	Attach or annotate equipment status labels or tags, such as DD Forms 1574 (Serviceable Tag - Materiel)	87
E199	Initiate, annotate, or complete AFTO Forms 350 (Reparable Item Processing Tag)	87
A15	Establish performance standards for subordinates	87
B51	Interpret policies, directives, or procedures for subordinates	86
E154	Annotate DD Forms 1348-1 (DOD Single Line Item Release/ Receipt Document)	86
B38	Direct in-shop pneudraulic repair operations	83
C101	Review supply daily document registers	83
E185	Complete DD Forms 1348-6 (DOD Single Line Item Requisition System Document)	83
B53	Orient newly assigned personnel	82
M656	Open or close CAMS	81
B54	Supervise Aircraft Pneudraulic Systems Specialists (AFSC 45454)	79
C66	Clear RED X conditions	79
C105	Write recommendations for awards or decorations	78
B29	Schedule leaves, passes, or temporary duty (TDY)	77
A17	Establish work schedules	77

TABLE A13

AERO REPAIR CLUSTER
(STG105)

NUMBER OF PEOPLE IN GROUP: 387 TAFMS: 108 MONTHS
PERCENTAGE OF TOTAL SAMPLE: 19% TICF: 81 MONTHS

TASKS		PERCENT PERFORMING
H370	Adjust components of flap systems	99
H444	Troubleshoot malfunctions within aileron systems	95
N704	Remove or install MLG components	94
H408	Operationally check aileron systems	93
H459	Troubleshoot malfunctions within wing flap systems	93
H429	Remove or install components of elevator systems	93
N711	Remove, repair, or install flight control surfaces	93
H427	Remove or install components of aileron systems	93
N703	Remove or install MLG assemblies	92
I466	Adjust components of nose wheel steering systems	92
H447	Troubleshoot malfunctions within elevator systems	91
H392	Inspect flap systems	91
I482	Operationally check landing gear normal extension and retraction systems	91
H412	Operationally check elevator systems	90
H418	Operationally check rudder systems	90
N706	Remove or install nose landing gear (NLG) assemblies	90
H386	Inspect aileron systems	88
H436	Remove or install components of rudder systems	88
I488	Remove or install components of landing gear retraction or extension systems	88
N707	Remove or install NLG components	87
N673	Adjust throttle control mechanical components	87
N673	Adjust throttle control mechanical components	87
H371	Adjust components of horizontal tail or stabilizer systems	87
H372	Adjust components of pitch trim systems	87
H426	Perform flight control systems rigging checks	85
I501	Troubleshoot malfunctions within landing gear extension or retraction systems	84
I463	Adjust components of landing gear emergency systems	84
I480	Operationally check landing gear emergency systems	83
I466	Adjust components of nose wheel steering systems	83
N719	Troubleshoot malfunctions within throttle control mechanical systems	83
I483	Operationally check nose wheel steering systems	83
N705	Remove or install MLG door assemblies	82
N688	Operationally check throttle control mechanical components	82